AMERICAN ANNALS OF THE DEAF

Official Organ

Conference of Executives of American Schools for the Deaf
Convention of American Instructors of the Deaf

IRVING S. FUSFELD
Editor

POWRIE V. DOCTOR
Assistant Editor

Under the Direction of

IGNATIUS BJORLEE, of Maryland, 1942
ALFRED L. BROWN, of Colorado, 1942
ELWOOD A. STEVENSON, of California, 1945
CLARENCE J. SETTLES, of Florida, 1945
MRS. H. T. POORE, of Tennessee, 1948
LEONARD M. ELSTAD, of Minnesota, 1948
PERCIVAL HALL, of the District of Columbia, *ex officio*

Executive Committee of the Conference

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AMERICAN ANNALS OF THE DEAF

Vol. 87 MAY, 1942 No. 3

Hired to Teach

STEPHEN W. KOZIAR, B.A.

Instructor in the Missouri School, Fulton, Missouri

TEACHING, especially as regards deaf children, is noble and important work that exacts far more besides mental energy and sacrifice. In filling teaching positions, teacher-candidates would do both themselves and the children justice by exercising caution as to the final decision of entering upon their careers. The profession as a whole would benefit more from teachers who get sustenance from work which advances the general welfare of the children rather than from those who look upon their careers as a matter of personal advancement. It is already an established requirement that one be adequately fit for the task before him and it has been pleasing to note that many over the years have been meeting the formal qualifications. However, this requirement, be it accredited training, experience, or special knowledge, would not be without its value if *love* for the work be included as a part. We all find joy in the work that we love to do; therefore teachers should manifest real love in their work, otherwise they should seek their joy elsewhere.

The trend in our teaching profession over the past number of years has been, and rightly so, toward better trained teachers. Among the noteworthy prerequisites of teachers is *experience.* This is as it should be for when taken at face value, this most desirable prerequisite looms importantly large and can very aptly typify accumulated wisdom as to ways proper. Yet many fail to realize that often

the experience credited to a teacher can be as deluding as it is high sounding. For it is not what one has done that counts so much as *how* one does the task. Experience such as knowing how to perform a task, along with a good background of training plus an understanding of child psychology, will go a long way toward the realization for which the demands are raised.

When hired to teach, we are, of course, expected to do that—and still more. It is one thing to be a teacher and quite another to know how to teach. But some of us have become so complacent in our easy chairs of classroom dictatorship that we fail to realize the obvious fact that the educational principles of yesterday must today in the light of an educational renaissance be met with an inventory of educational values as well as of personal teaching knowledge. In evaluating personal teaching traits we call efficiency to the fore. To be efficient teachers we must know a great deal more than the mere task of handing out assignments. Backed by a good understanding of mental hygiene, we should know *what* the pupils learn, *how* they learn, and *how much* they learn, with always an alert eye for remedial work of all sorts. This, after all, is the main reason why we are hired as teachers; and to be able to teach means, in the true sense of the word, to be able to mould mind as well as character. It is, in truth, with very delicate fabric that we work, therefore it is essential that we be ever ready with the proper tools; otherwise a great deal of injury will be the sorrowful result of our labor, however well-meaning our efforts appear.

It is not to be inferred that because there are pupils to be taught, we have been hired. It is and always should be that we are hired on the basis of what we can do toward the general betterment of the pupils. Yet how many of us are sure we are not teaching textbooks but human beings? How many of us have sometimes shown impatience over the seeming slowness of the pupils in answering questions or problems and, to save time, have thrown the answer before them? Now, throwing answers before the pupils is not teaching. The pupils as a whole enjoy working and doing by

themselves what they understand and if we would watch the expressions of the pupils, we could see that they always show joy over the completion of a task that heretofore seemed difficult. Granting allowances for mental cases, when the pupils do not come forth with the answer for the questions or problems, in as many cases as not the reason lies with the teacher and her technique. We can help the pupils only if we are first sure of ourselves in our own hearts and souls, and when we understand the pupils' capabilities as well as their limitations.

Should we condemn the pupils who find difficulty in their work? But what about those of us who present the answers to the pupils as they sit at their desks in worshipful miscomprehension? As teachers we are not hired to do the pupils' work. We are hired to guide them and to give them light, that is, to teach them so as to make them understand. But when we begin to do the pupils' work for them, our light goes out. Likewise, when a lamp goes out, it is not a lamp; for the purpose of a lamp is to give light.

Lack of patience is an unpardonable sin with some of us. When to save time because the pupils can not readily find the solutions themselves we hand them the answers so as to keep up with our planned daily programs, what are we doing? Surely not teaching. When an answer is not easily forthcoming from the pupils, we should realize that patience, fitness, and insight go together here. We must understand the pupils, know them, consider their efforts as well as both their accomplishments and failures, and weigh carefully the adaptability of the assignments to their future needs. We must never forget that what we are trying to give them now is only a rung in their educational ladder of which the topmost rung is not too be reached in the highest class in school but in the future when they must carry on their education alone. So, if we do not take the time to give them the power of understanding now, we are making their future helpless. Surely we can not call them learned by placing the answers before them, neither can we give them knowledge, but we can and should give them the key to knowledge.

On meeting a stranger seeking a location, we do not

foolishly lead him by the arm a mile or so away to the desired place, but we do give, if we can, the directions how to get there. Might we not be as kind to the pupils as we are to the stranger? Pupils, we should be sure, take pride in thinking out problems once they are properly shown how to do so. Therefore, to show pupils how to think is real teaching. Instead of thrusting the solution upon them, it would be wise to give or work out simpler questions or problems similar to the original so that the pupils can apply the same process of reasoning. Let us do more than our share for which we are hired and then the pupils will get their due. For they have come to school to be taught, not to sit at their desks and marvel at the wisdom and dexterity with which we try to do their work.

Something of Me

EARL MARTIN

Sedalia, Missouri

[Earl Martin was a pupil at Perkins Institution, Watertown, Mass., for eleven years, beginning in the kindergarten at the age of seven, about two years after he had lost his sight and hearing, the result of double pneumonia brought on by a relapse of influenza. He is very proud of the fact, and rightly so, that he was the youngest graduate in his class, being eighteen years of age less than two weeks before his graduation. His hearing, in only one ear, is approximately thirty per cent.—*Editor,* ANNALS.]

WHEN I was casting about in my mind for a suitable topic for an essay, it occurred to me that I had never tried to write anything about what it meant to have a double handicap. It seemed to me that it would be as interesting a topic as any, and that it might prove rather enlightening to those who do not know what it means to adjust oneself to a difficulty that must always be faced. I shall try, then, to give you a little glimpse into the life of the deaf-blind.

Being blind is not so bad in itself, but to be both deaf and blind adds enormously to the problem. Of course there are various degrees of deafness as of blindness and each means a special adjustment. I have no hearing in my left ear and only approximately thirty per cent in the right. Mind you, I am not trying to make you feel sorry for me, but I am stating a fact. Thirty per cent is a rather slight amount to get on with, and is even useless in some cases. I am mighty thankful to have it, though, because I can at least hear what the human voice sounds like. I feel very sorry for the totally deaf, who cannot hear the sounds of everyday life. Especially the laughter and speech of their friends. It is a great consolation to me to be able to hear even as much as I do, however difficult that little makes some situations.

You may be interested in knowing something about my means of perception. A totally or partially deaf person relies on vibrations, sense of smell, and facial perception. I use the first and second, the last not so much. There is nothing less pleasing to me than a solid floor because I

cannot feel vibrations on its surface. Of course, not being totally deaf, I can get quite a bit of sound through my right ear. For instance, I can hear the footsteps of a person with hard heels or the sound of a vehicle passing. However, this is not sufficient for crossing roads safely since I cannot hear cars at a great enough distance. I can usually tell whether it is an automobile, a truck, or a wagon passing by. I enjoy sitting in a room with a wooden floor and following the footsteps. If only one other person is in the room, I can tell, for the most part, what section of the room he is walking toward. On a hard floor I can hear the clicking of heels and feel the wind of their passing if the people are walking fairly rapidly. For conversation the speaker has to get fairly close to my ear before I can understand what he is saying. At two feet he must shout and across the room he must shout very loudly. Even then, with deepest concentration, I can seldom hear what he is saying.

What of the social life of the deaf-blind? For myself, I get a great deal of enjoyment out of dances and parties and sports such as roller skating, rowing, and swimming. Unfortunately I can never hope to excel in any sport which requires a nice sense of balance. That sense, as you know, is located in the auditory organ. Therefore, in my case, the disturbance of that organ is an added handicap. But I can slide around on skates of one sort or another and I am fairly good at dancing, which I enjoy very much. Usually I can hear enough to keep time to the music, unless there is only a piano. In that case I have to trust in part to my own judgment and to my partner's. Swimming is quite different, and in that activity I can do as well as the next fellow. Naturally, I do not attempt to participate in track or field events. But where I really find the greatest difficulty, because of the defective sense of balance, is in walking. I prefer, therefore, a companion as tall as or even taller than I because I stagger most of the time. If the going is smooth, I can manage fairly well with a short person, but I reel, especially if I am tired. I have sometimes thought that if I could get some strenuous exercise for my legs that might develop the muscles enough to improve my

balance. Nothing would please me more than to be able to walk gracefully.

Curiously enough, I believe that I enjoy the human voice more, perhaps, than normal people do. There are certain singers on the radio who have a special charm for me even though others do not share my enthusiasm. It is some distinctive quality in the voice which strikes my fancy. Although I cannot understand the words, I can get the tune of the song.

These are the pleasures I can enjoy. Now a word about some of the deprivations. At parties and dances, I have very little chance of participating in the fun, unless I have an understanding partner who will describe things to me and tell me what people are saying. At the dinner table, I have to miss the conversation and jokes as those sitting next to me cannot talk in my ear and eat at the same time! In fact, under any circumstances, it is not easy to find people who will bother with a deaf-blind person. So much patience is required! I have had many disheartening experiences. I can count on my fingers the friends who are willing to put themselves out to help me enjoy the pleasures of life. Understand, I am not blaming the normal who cannot be expected to realize what deaf-blindness is, and I try to make it as easy as possible for them. This means, therefore, that I must sacrifice a great many pleasures since I would not willingly make demands that would be irksome for others to accept. I have disciplined myself to acceptance of the fact that since I became deaf and blind, I have had to learn to live a different sort of life. I have had to adjust myself to the necessity of living as a handicapped person in a world made for normal beings; I have had to narrow the scope of my activities. Yes, like so many others, similarly handicapped, I have determined to use my intelligence to make life as rich and full as possible and to get from it the joys that come from participation.

Deafness—A Consideration of Its Causes[1]

WALTER A. WELLS, M.D., F.A.C.S.
Washington, D.C.

EVERYONE wants to know the causes of things. It is an instinctive characteristic of the human mind. Something happens—why did it happen? Who or what made it happen? Our curiosity arises out of a feeling that if we know and understand causes, we might be able to avoid effects that are harmful and enjoy those that are to our benefit—in the case of disease, that by removing the cause we could be rid of it.

But the matter is never so simple. In its application to the problems of disease it is beset with much difficulty. First there is the difficulty in the discovery of the cause, and next the difficulty of its removal even after it is known.

There is no royal road to the discovery of the causes of a malady. Instead of just one factor which we like to think of as being the cause, there are always a number of factors, all contributory, and all to be considered in their respective bearing upon the final result.

The causes of a disease must not be confused with its pathology, which has reference in particular to the underlying changes in structure of the organ or tissues affected.

It is not sufficient or proper to say, for example, with regard to a case of deafness that it is caused by ankylosis of the ossicle or suppuration of the middle ear. This is only to state the pathology of the disease of which it is a symptom. We must go farther back and try to discover if possible the primary conditions or factors that are back of these changes.

Since a number of causes come into play in the production of deafness, some much more important than others, it requires superior judgment and a nice discrimination to assign to each its proper place in the final effect.

While not ignoring the influence of the indirect or predis-

[1] Reprinted, with permission, from *Medical Annals of the District of Columbia*, October, 1941 (vol. 10, no. 10), pp. 387-392.

posing causes, practical consideration demands that the greatest emphasis shall be placed on those which can be identified as direct or determinant.

Heredity.—The factor of heredity does not apply except perhaps in a most indirect way to deafness in general; but there is one type in which it is without doubt a most important, and one might say, dominant factor. Reference is made to that bugbear of the otologists, the disease called otosclerosis.

This form of deafness is now recognized as a much more prevalent disaese than was formerly thought to be the case. According to Shambaugh it constitutes about one third of all cases of chronic progressive type encountered in adults.

Much effort has been made to discover other possible causes, but the only one upon which there is any agreement is heredity. This is strongly suggested by the common observations of two or more children of the same family being similarly affected, and it has been pretty well established by a thorough study of family histories. Evidence of occurrence of the same disease in near relations can be found in approximately 50 per cent of the cases.

The heredity factor is even more firmly proved in cases of congenital deaf-mutism. Some years ago Edward Allen Fay of Gallaudet College in Washington analyzed 4,000 family histories with reference to this point. He pointed out that although no deafness is evident in the immediate parents of a deaf child, an undiscoverable defect is present and it will crop out according to the regular Mendelian proportion. The inheritance factor is further shown by the observation that when both parents are congenital deaf-mutes, there will be a deaf-mute offspring in every sixth or seventh case; that when only 1 is a deaf-mute, the incidence of a deaf-mute offspring is about 1 in every 30 such cases.

The importance of these facts lies in the habitual segregation of persons with this form of handicap and the natural tendency of selection of mates by reason of propinquity. This should be made clear to the persons concerned and all reasonable efforts made to discourage such fatalistic steps.

Environment.—Hearing tests of school children have

brought out the fact that a decidedly greater number of cases of deafness is found among the children of poorer neighborhoods than among those in the well-to-do sections. This is probably due to a difference in food, air and general hygienic conditions.

Climate.—Cold and dampness are unfavorable atmospheric factors. Ear troubles are more common in the winter because of the greater incidence of colds. Acute ear infections and mastoiditis are common complications of influenza, which has its great incidence during the winter months. Susceptible persons who can afford it will do well, therefore, to spend these months in a mild climate, such as we have in Florida, Georgia and Southern California.

Age.—Different types of deafness are associated with different groups. Acute middle-ear inflammations, though often overlooked, are particularly common in very young children. Head colds have a fatal tendency in infants to involve the middle ear and produce abscess. Measles, scarlatina, diphtheria, etc., in which serious middle-ear complications are so common, are essentially diseases of early childhood. There should be constant watchfulness for first evidence of such conditions not only because they lay foundations for future ear trouble but because they constitute a danger to the young child's life.

There is one ear disease, and that a very bad one, which shows a special predilection for the important years of early manhood and womanhood. Otosclerosis comes on as a rule between the ages of 18 and 20. It resists all known methods of treatment and is slowly progressive, so that once contracted it becomes a lifetime burden.

Old age, however, has its own characteristic type of deafness, one that applies without fear or favor to all people and is, therefore, strictly an age phenomenon. It is a form of nerve deafness marked particularly by a defect for the hearing of the high notes. In fact, it is such an unfailing accompaniment, and the rate of decrease keeps such a steady step with advancing years, that if disease can be eliminated, one may safely venture to estimate the age of an individual by his pitch hearing.

The upper normal limit for young persons is usually put at about 20,000 cycles per second, but after the age of 20 there is a gradual falling off, which is approximately to a note 2,000 lower for each succeeding decade, so that a table might be made as follows:

Age	*Upper Hearing Limit*
20	20,000 cycles per second
30	18,000 cycles per second
40	16,000 cycles per second
50	14,000 cycles per second
60	12,000 cycles per second
70	10,000 cycles per second
80	8,000 cycles per second

General Health.—The general state of health may be assumed to have at least an indirect influence on the hearing. As a result of lowered vitality the body resistance is lessened and the individual becomes more liable to develop a cold or an infection which will affect the ear and lead to deafness.

Some writers lay great stress upon vitamins. It is known from experiments that a deficiency in vitamin A causes a deterioration of the mucous membranes. It is not certain, however, that the converse is true, *viz.*, that an extra supply of this vitamin improves the mucous membrane.

There is as yet no clinical proof that a diseased hearing organ can be benefited by any particular vitamin or combination of them.

The role of the ductless glands is also uncertain. They are thought by some to have a certain influence in the causation of otosclerosis, but the relationship is as yet obscure.

Mental as well as physical depression is observed at times to have an influence. The hearing will often fall off, at least temporarily, in cases of great fatigue and may be persistently bad in neurasthenia or general nervous prostration.

A sudden temporary complete loss of hearing sometimes occurs as a result of hysteria.

Systemic Diseases.—Certain serious systemic diseases are in some instances chiefly to be blamed for an existing deafness.

Diabetes, arteriosclerosis, tuberculosis, and syphilis may

in certain circumstances seriously affect the auditory apparatus.

Syphilis, if it goes undetected and untreated, can have the most disastrous results. In former years the disease was the cause of a great proportion of cases of complete or almost complete deafness. But there has been a notable lessening with the recent spread of a more general knowledge of this disease and its dangers.

Focal Infection.—There are many cases of deafness that can be directly attributed to the presence of focal infection in some part of the body rather than a local disease of the ears. We are indebted to Dr. Emerson more than anyone else for insisting upon this point and finally convincing the profession. A purulent focus will throw into the blood stream toxins which, when they come into relation with the delicate nerve endings of the auditory nerve, will have a serious effect upon its function. When such a condition continues for a long time unchecked, degeneration of the nerve will eventually occur.

The most common sources of such a focus are the teeth, tonsils, and the sinuses, but similar results may come from other organs, such as the kidneys, the gall bladder, or the intestinal tract.

Occupation.—There are certain occupations that have a baneful effect upon the organ of hearing. Chauffeurs, teamsters, and others who have to be exposed to severe cold and bad weather conditions are liable to cold and as a consequence to ear involvement.

Occupations attended with an undue amount of dust, smoke, or irritating fumes must be regarded as unfavorable.

We have for a long time understood the evil effects upon the mucous membrane of overheated apartments. The time has now come to make known the hazard of the overcooled apartment.

Both are equally unfavorable to the proper functioning of the heat-regulating mechanism of the human body and to the maintenance of a healthy state of the mucous membrane.

Severe variations in air pressure are injurious on account

of direct effect upon the drum membrane. Caisson and tunnel workers often suffer on this account. Slight and gradual changes are compensated for by the Eustachian tube, but the compensating action of the tube is inadequate for a sudden severe change of pressure, especially in cases of catarrhal obstruction in the tubes.

The eardrums are also in danger from water pressure in deep diving, and this unfortunately cannot be compensated for by way of the tubes.

The ears are naturally affected by high altitudes due to the rarefied atmosphere. High flying in some cases is followed by a definite otitis media. There is special danger in the case of obstructed tubes. For this reason one should not venture into the thin upper air when suffering from an acute cold.

Certain occupations are bad for the ears on account of the attendant noise. The ear may be injured by a sudden explosive noise, as from the firing of cannons or bursting shells, on account of the effect of the sudden air compressure on the drum; also, by excessive and disagreeable noises from their effects upon the auditory nerve. The latter is illustrated by the well-known deafness common among boiler workers and others employed in especially noisy industries.

Noises.—The noises of our modern civilization are without doubt a serious menace to our ears. The noise of the world may be roughly classified as originating from the following causes: (1) animate nature, (2) war, (3) building and construction, (4) traffic and transportation, (5) manufacture, (6) commerce and (7) communication.

The noises incident to construction are probably the most intense of all those to which the modern city dweller is exposed.

It is said that the erection of the great steel skyscraper takes a heavy toll from among the workmen because of the extra hazardous nature of the work. There ought also to be charged to it certain ills of which no reckoning is usually made, and which affect not only those engaged in the work but also the innocent neighbor and the disinterested passer-by.

There is nothing that better bespeaks the wisdom of Solomon than the precaution he took for the noiseless construction of his famous temple. Since his own pastoral people were unskilled in such work, he engaged artisans from Tyre and Sidon, but he directed that all the work of cutting and chiseling of the stone should be done at a distance away, so that, as it is written, "no sound of hammer or ax or any tool was heard in the house while it was building."

Would that we had a Solomon to protect our people from the ruthless builders in our great cities. He would save many from ruined ears and shattered nerves. It is not now a matter of such mild noise as that of hand-plied hammer and ax and saw, but the unearthly din of rock drills, excavating shovels, pneumatic hammers and, worst of all, riveting machines.

Street noises are mostly those of transportation—trains, buses, taxis, trucks and private cars.

The noise of steam railway transportation has in recent years been improved somewhat by better roadbeds and better-built cars. The noise of freight cars, especially when backing and filling on a side switch, with the coupling and shrill whistles of engines, leaves, however, much to be desired.

The noises of water transportation are in general not so bad as those of land, but for persons who live near water fronts the foghorns and whistles of tugboats and other craft are often very disturbing, especially at night.

The newest arrival in the field of transportation is the airplane. It has a noise all its own, and usually of such intensity that passengers and pilot must wear earplugs and forego all conversation while en route—a noise of such stunning effect to some that they will be deafened for many hours ofter landing.

As noises coming under the head of commerce one should mention especially those connected with the collection and delivering of merchandise. The throwing about of boxes and barrels and tin containers is in this category.

The early morning call of the iceman and the milkman are particularly dreaded in some quarters.

We must also include here the weird call of hucksters, the hoarse shout of newsboys calling "Extra," the bell ringing of the scissors grinders—all noises with which most of us would willingly dispense.

The recent great increment in the noises of civilization is attributable to the coming into common use of measures for more rapid communication, the telegraph, the telephone and the radio.

Of all the most notable is the radio. The click of the telegraph key or the bell ringing of the telephone receiver seldom bothers anyone except those directly in the room, but the squeak and squawk of the radio are often heard through the partition walls of the apartment and are sometimes carried out of the windows to the neighbor across the street or people on the sidewalks below.

Some interesting experiments have been made by Witmaack, Yoshi, Siebenmann and others of exposing animals continuously in close proximity to intense sounds of various kinds and later examining post mortem the deafened ear. Degenerative changes were found in Corti's organ, and it is notable that they were chiefly located (in confirmation of Helmholtz's doctrine) in parts of the cochlea corresponding with the pitch employed.

The damaging effect of sound upon the nerve elements of the cochlea has been verified by recent laboratory studies. Positive evidence of injury to the basilar membrane has been repeatedly noted, and in some cases when the sound was of great intensity this membrane was actually dislodged from its normal position.

Sometimes the middle rather than the internal ear is affected by excessive noise. Sudden intense explosives, such as those of bombs and heavy machine guns, may spend their force on the middle ear, causing rupture of the tympanic membrane and hemorrhage. This may act as a safeguard against injury to the labyrinth, but labyrinthine concussion may nevertheless occur at the same time.

It is important to know that the internal ear may be injured not only by loud sounds reaching it by air conduction, but also by vibrations conducted by way of the skeletal

structures. This may happen from vibrations received by way of the floor or by contact with certain parts of vibrating machinery.

Chemical Poisons.—We are especially indebted to Dr. Marshall Taylor of Jacksonville for bringing forcibly to our attention the frequent and severe damage done to the ear by the ingestion of certain chemicals. By some convincing studies he has proved that these injuries are often conveyed to the unborn child from drugs taken in large doses by the pregnant mother and that some cases of congenital deafness are to be so explained.

Besides quinine, we should beware of the possible harmful effects of the salicylates and also mercury, arsenic, lead, and carbon disulphide.

We have to include among those agents possibly harmful to the auditory nerve, coffee, alcohol and tobacco.

It is true that many people use one or even all of these in excessive amount without apparent injury, but we cannot be sure that they are not causing more injury than is apparent. They are all certainly nerve poisons in excessive doses, and the nerve of hearing is especially delicate. Furthermore, as has been pointed out elsewhere, slight defects of ears are surprisingly common and many people are a little deaf without in the least suspecting it. Remember, too, that idiosyncrasies occur, and one person may be extremely susceptible to what thousands of others may seem to use with impunity.

Infectious Diseases.—It is well known that the infectious diseases are prone to involve the ears, and this is particularly true of the so-called exanthemata, those contagious diseases of childhood marked by skin eruptions.

In some cases (measles, scarlet fever, diphtheria) the infection involves the middle ear; in some (mumps and meningitis) it is the internal ear. When it is the nerve that is involved the deafness is generally complete and permanent.

A child may have an attack of mumps so slight as to give no concern until it is suddenly discovered that the hearing is completely lost in one of the ears, for fortunately it is usually one ear and not both that is affected by this disease.

In meningitis both ears are often affected, with complete deafness resulting. The ears should always be closely watched in cases of measles and scarlatina, because a serious otitis may develop without pain. Influenza is probably the most potent cause of suppurative disease of the middle ear. With every epidemic of influenza there are a lot of abscessed ears, some of which go on to involvement of the mastoid.

In very young children pneumonia is almost sure to be attended with middle-ear inflammation.

The Common Head Cold.—If we keep in mind the relationship between nose and ears we shall have no difficulty understanding how ear troubles occur in the common head cold.

The Eustachian tube is the connecting link between the nose and the ear. When everything is normal, it serves a useful purpose in allowing air to enter the middle ear and in allowing excess of fluid to escape. But when conditions are abnormal it becomes the pathway for the entrance of disease.

"Adenoids and Tonsils."—In the case of children we must rate as the most important of all the causes of deafness, hypertrophied adenoids and diseased tonsils. This is supported by a great mass of statistics from many sources. But statistics are not necessary, because all physicians and many laymen have in their own experience evidence of the relationship. We are all familiar with the cases of children who were constantly having trouble with their ears, earache and abscesses, all winter through, and who as soon as the adenoids and tonsils were removed were relieved as if by a miracle.

The adenoid has some useful function in children up to about the age of 4 years, when it should begin to atrophy and disappear. But unfortunately it so often takes the other turn. It is easily inflamed, and a result it becomes thickened and so enlarged as often to fill the entire cavity back of the nose. Since the Eustachian tube openings are located on each side of the cavity, the adenoid may grow over them and cover them up.

This is bad because it interferes with the natural function of the tubes, which is to ventilate and drain the cavity of the middle ear.

When the adenoid becomes acutely inflamed, as so often happens, there is great increase of secretions, and then all the region becomes bathed in mucopus swarming with germs. Thus is added to the mechanical effects of obstruction the likelihood of the extension of infection directly through the tubes to the tympanic cavity.

Crowe of Johns Hopkins has recently called attention to the failure of the hearing to improve after operation due to the persistence of small remnants of lymphoid about the mouth of the tube. He suggests for such cases the employment of small doses of radium applied by means of a tube passed through the nose.

The Sinuses.—The middle ear may be regarded in a sense as only another of the nasal accessory sinuses, for like them it is a small cavity hollowed out of the bone, containing air, connected with the passages of the nose, and similarly lined with mucous membrane. Like the nasal sinuses proper, therefore, one may naturally expect that in any severe cold, especially such as exists in attacks of grippe, the ear too will be involved.

Another thing to remember is that as a result of what is called ciliated action, all secretions of the nose are constantly being propelled backward into the nasopharynx. When, therefore, the nasal sinuses are badly affected and are producing pus, one finds regularly the region about the mouth of the Eustachian tubes occupied by a purulent secretion. In such a case infection of the middle ear sooner or later is almost inevitable.

Cullom found that 85 per cent of all of his cases of mastoiditis which came to operation gave a definite history of sinus infection.

In this connection must be mentioned the swimming pool, to which both sinus and ear infections are frequently traced. It is of course stupid to imagine that one can prevent middle-ear infection by the use of an ear protector worn in the

canal, except in the case of a ruptured drum membrane, in which it is advisable.

In all other cases the infection reaches the middle ear by way of the Eustachian tube.

Since middle-ear trouble so often develops as an extension of inflammation through the tube, it is obvious that all causes of diseases of the upper air passages may be considered possible indirect causes of ear disease.

A Preliminary Survey Into Problems of Adjustment Among Pupils of the Lexington School For the Deaf[1]

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INTRODUCTION

THE STUDY of personality and the study of the deaf are both tantalizing and challenging subjects. The students of each frequently find themselves involved in labyrinthine mazes or suddenly led up unsuspected blind alleys. Psychological and educational tools are constantly being produced and refined to facilitate their work. The advances and contributions made in each field are sources of satisfaction to the workers in these fields. Yet collaboration among these workers is only of very recent date and has merely touched the surface of a wealth of material open to investigation. A defeatist attitude might, in fact, very easily insinuate itself into a field so sparsely equipped with effective psychological tools for investigation and research as is the field of the deaf, were it not for one fact: the real need for such tools.

Persistent reminders of this need are evidenced in many phases of the work with the deaf, ranging from the effort to attain mentally and educationally homogeneous class groups through analyses of problems in school subjects. The most challenging demand for psychological assistance, however, is presented by that provoking and pathetic group of deaf children who stand in danger of acquiring an additional handicap and one even more serious to their future well-being. These are the maladjusted: The deviates from

[1] The authors gratefully acknowledge the splendid co-operation of the staff of the Lexington School in making this survey possible.

the personality-norm of their own group; those who have been unable to attain even an average degree of emotional serenity and balance; the potential neurotics.

Hearing children presenting by and large the same problems of adjustment as are prevalent among this group find many psychological and psychiatric services available to them. Not so the deaf. In our experience, the deaf child seems to present an even greater diagnostic and therapeutic problem to such services than he does to his own school. It seems then that until specialized workers, tools and techniques are available to aid in the personality diagnosis and subsequent therapeusis of the deaf problem child, the school much assume still another responsibility for the welfare of its charges —that of psychological guidance.

The Lexington School has attempted to meet this responsibility by evolving a plan which it is hoped will ultimately aid in the adjustment of these children so that they may, as adults, be spared the additional handicaps which inadequacy in social living breeds. We have called this our Mental Hygiene Program, and are presenting it at this time as a contribution to the work which schools for the deaf all over the country are doing in behalf of their pupils. An exchange of ideas and findings among these schools in a spirit of co-operation for the common purpose of aiding this particular group of deaf children would, we feel, go far to counteract the present deficiency of psychological data regarding such studies.

Plan for the Mental Hygiene Program

Before the Mental Hygiene Program itself could be effectively organized, it was found that much preliminary work would have to be done in assembling the group to be studied. Accordingly, a plan of procedure was evolved leading step by step to the ultimate goal: Therapy. The general organization of this plan is as follows:

I. Assembling the "Problem Group"
II. Analysis of Group Trends
III. Comparison with the School Population

IV. Study of the Individual Cases
V. Plan of Therapy

Assembling the Problem Group

Assembling the group of children in marked need of guidance and counsel (whom for lack of a better name we shall refer to as the "Problem Group") was of course the starting point of procedure. It was felt that the most natural sources of reference to such children were those whose contact with them was a continuous and intimate one—their teachers and counselors. Preliminary discussion revealed, however, a significant divergence of opinion on the part of these sources concerning the questions of what constitutes maladjustment, its manifestations in children, and its psychological implications. Since the judgments of teachers and counselors were to be influential factors in identifying these children, it was feared that such divergences of opinion would lead to too great subjective distortion of results. Consequently, before any actual work was begun in assembling the group, a groundwork was laid for the purpose of rendering these judgments more valid. This groundwork consisted of a series of eight lectures delivered to the school staff by Dr. Ira Wile, eminent psychiatrist and one of the few in his field familiar with the problems of the deaf. The topics which Dr. Wile discussed clarified the contended issues and served to equip his audience with greater insight into the task at hand.

The next question to be considered was concerned more directly with the methods by which information could best be secured so that it could be utilized later in more analytical work. Accordingly, what might be termed an Adjustment Inventory was planned for the school, the techniques used being chosen with an eye to check and balance. They were as follows:

1) The Rating Scale
2) Adjustment Inventory for Deaf Children—by Lily Brunschwig
3) Discussion of cases by a Mental Hygiene Committee composed of staff representatives of the Lexington School with Dr. Ira Wile as consultant.

The Rating Scale.—Since there are no psychological rating scales standardized for deaf children, a rating scale was formulated for this study. The Haggerty-Olson-Wickman Scale and the Personality Rating Scale of Leslie R. Marston were used as models with necessary changes and additions being made to suit the purposes of the investigation. This new scale has no numerical score, but depends for its value upon the informational material included in it. This material may be divided into three categories: 1) Material inherent to the pupils' background, *i.e.*, Cause of Deafness, Age of Onset, Hearing Loss, Deafness in Family, IQ, Handedness, Other Physical Defects, How Long in School, Resident or Day Pupil, How Often Home; 2) Material concerning the pupils' School Reactions, Psycho-Social Reactions, Speech Habits and Reactions; 3) Free remarks and personal observations and opinions of the raters which they might wish to include in order to individualize the scale report.

Group 1 includes data which present objective factors which may upon investigation be found to give significant leads in the study of problems of adjustment among the deaf. In Group 2 we find the types of reactions peculiar to the child and by means of which he gives evidences of possible maladjustment. These rating scales were submitted to both teachers (academic and vocational) and counselors to be filled out for those pupils who by comparison with their group seemed in need of psychological or psychiatric help.

The Adjustment Inventory for Deaf Children.—In order to check upon the subjective returns of the rating scale, an objective test was administered to all the pupils of the school from the age of about 10 years upward. The Adjustment Inventory for Deaf Children by Lily Brunschwig was chosen. This test is unique in that it has been standardized on the deaf for use with deaf children. It consists of a check list of answers to 64 questions which the pupil tested answers by himself. The scores on this test indicate the percentile standing of the child with respect to General Adjustment, Social Adjustment, School Adjustment and Home

Adjustment—four separate scores in all. The value of the test in this present investigation lies in the objective confirmation it will impart to the somewhat subjective results inherent in rating scales.

In summary then, the three sources of reference by means of which the Problem Group was ultimately assembled were: 1) The Teachers' Ratings; 2) The Counselors' Ratings; and 3) The Brunschwig Inventory. It was decided to include within the group to be studied those children who were referred as cases of possible maladjustment by at least two of the three sources. In this way, it was felt, greater validity of selection would be secured.

Groups Submitted.—As the administration and scoring of the scales progressed, it was found that limitations in the possible scope of the survey were imposed, partly due to the nature of the tools and partly because of the subjects themselves.

The Rating Scale was deemed invalid for the general estimation of adjustment in the Nursery and Preschool grades. Children of an age found in these grades were considered too young and in too dynamic an adjustment period for adequate insight into the significance of their present behavior on the part of the rater.

In addition, it was found advisable to limit the data secured through the Brunschwig Inventory to those pupils above grade 3B. The reason for this was the fact that the language of the inventory was found too complex for the pupils in grades 3B and below to grasp and comprehend adequately.

Also, those children whose major problem was primarily one of inferior scholastic achievement resulting from obvious mental retardation were not included in this survey.

And finally, since the Lexington School was reorganized into a girls' school in 1935, retaining male pupils only until the age of about 12 years, this study is limited almost entirely to the investigation of maladjustments among girls. Of a total of 247 pupils, not including the nursery and preschool grades, less than 15 boys fall within the range of this survey. The following totals indicate the number of children selected by the indicated sources.

1) Total Number: The total number of children reported from all sources as giving evidences of maladjustment was 123. This number, including about 50% of the school population studied, is without doubt a much too high estimate.
2) Reported by Both Teacher and Counselor:
   a) The total number of pupils reported by both teacher and counselor was 28.
   b) No Brunschwig records could be obtained for 17 cases.
   c) Of the remaining 11 cases, the Brunschwig Inventory confirmed the Teacher-Counselor opinions in 8 cases.
   d) In 3 cases, the Brunschwig data indicated good adjustment contrary to both Teachers' and Counselors' opinions.
3) Reported by Teacher:
   a) The total number of children reported by the teacher alone was 30.
   b) No Brunschwig records could be obtained for 11 cases.
   c) Of the remaining 19 cases, the Brunschwig findings confirmed the teachers' opinions in 12 cases.
   d) In 7 cases, the Brunschwig Inventory indicated good adjustment contrary to the Teachers' opinions.
4) Reported by Counselor:
   a) The total number of children reported by the Counselors alone was 51.
   b) No Brunschwig records could be obtained for 32 cases.
   c) Of the remaining 19 cases, the Brunschwig Inventory confirmed the Counselors' findings in 9 cases.
   d) In 10 cases, the Brunschwig findings indicated good adjustment contrary to the Counselors' opinions.
5) Reported by the Brunschwig Inventory:
   Although reported by no other sources, 14 children gave evidences of very low adjustment on the Brunschwig Inventory.

Summary of Assembling of Problem Group.—Of the total of 123 children reported as maladjusted from all sources, the objective findings of the Brunschwig Inventory confirmed the more subjective Rating Scale reports in a total of 29 cases. However, the Brunschwig records of 60

of these 123 children had to be discarded as invalid chiefly because of difficulties in reading comprehension. Twenty of these 60 children were reported as in need of guidance by both Teachers and Counselors.

In 20 cases, the Brunschwig records indicated favorable adjustment contrary to the findings of the other sources. And finally, in 14 cases unreported by Teacher or Counselor, the Brunschwig data indicated very poor adjustment.

In accordance with the original plan of determining the choice by the number of referring sources, 49 children were found to warrant consideration as problems of adjustment through having been submitted by at least two of the three possible sources. This reduces the original estimate based upon referrals from all sources from 50% to 20% of the school population included in the survey. This latter seems a more feasible estimate covering the lowest adjustment quartile of the school. The remaining children have been omitted from the Problem Group purely for lack of confirmatory evidences of maladjustment. It is understood that they warrant continued observation.

Although not within the scope of this present paper, individual analysis of the Brunschwig reports would serve to provide excellent corroboratory material concerning the validity of this test. These findings may be presented at some future date. At present, however, superficial observation and teachers' comments indicate that this validity is most threatened in two ways: 1) Through limitations in reading ability and reading comprehension of the subjects; and 2) through the desire of many of the children to answer questions in such a way as to create a good impression regardless of the actual facts of the case. This latter tendency is, of course, frequently found in tests of this type.

Analysis of the Group and Comparison with the School Population

The interrelationship of factors upon which the successful adjustment of any individual depends forms a highly complex and intricately patterned mechanism. We should

by no means be daring enough to attempt to isolate these factors, let alone evaluate them in their relationship to each other. In this analysis of our group and in the comparison with the school population, we have merely taken a very few of the obvious and more tangible factors and have attempted to see whether they might upon analysis and comparison present significant deviations. Continuing in this empirical fashion, we have avoided comparisons between deaf and hearing groups as introducing additional factors extraneous to the present problem.

We are concerned with two groups, both deaf. One group has been able to achieve emotional stability through a delicate molding of thoughts, desires, attitudes and ambitions within the scope of its own mental, physical and social limitations. The other has been unable to achieve this happy balance. The next step in our plan of procedure is to ascertain whether a comparison between this latter group and the general school population will reveal any significant variations that might provide a clue to this situation.

The factors chosen for consideration are as follows: 1. The IQ; 2. Factors Relating to the Deafness Itself, such as Cause of Deafness, Age of Onset, Hearing Loss, Having Deaf Relatives; 3. Factors Relating to the Subjects' Social Opportunities, such as Age, How Long in School, Resident or Day Pupil, How Often Home; 4. Physical Factors, such as Other Physical Defects, Handedness; and 5. A presentation of the types of reactions and problems of this group as reported by a) Teachers and Counselors and b) The Brunschwig Inventory Group Profiles. Wherever possible, data have been compiled separately for those born deaf and for those who became deaf after birth.

The IQ.—While the significance of the IQ may have been somewhat overstressed in problems of adjustment, the fact remains that it is an important consideration in both the diagnosis of and subsequent therapeutic approach to the maladjusted child. The problem of intelligence testing among the deaf has as yet not been settled to the complete satisfaction of either educators or psychologists. It does not fall within the scope of this present paper to venture

an opinion concerning the validity of such tests. Of primary importance at this time is a comparison of the available IQ ratings of each group—the Problem Group vs. the School Population—in order to ascertain whether marked deviations exist. The resultant findings are presented in Table I.

TABLE I

A COMPARISON OF THE PROBLEM GROUP AND SCHOOL POPULATION SHOWING DIFFERENCES IN INTELLIGENCE BETWEEN THE ADVENTITIOUSLY AND CONGENITALLY DEAF

Group	*Number of Cases*	*Range*	*Median IQ*
Problem Group			
Congenital	33	54–130	88
Adventitious	16	54–145	101
School Population			
Congenital	130	51–167	99
Adventitious	76	51–156	99

The median IQ's obtained for the school population confirm the findings of Dr. Rudolf Pintner that "there is no difference between the intelligence of those born deaf and those who became deaf after birth" when studied as groups. In the case of the Adventitiously Deaf, the deviations of the median of the Problem Group from that of the School Population can be seen to be very slight and of no apparent significance. This difference is more marked in the case of the Congenitally Deaf. Here a deviation of 11 points in favor of the School Population is found. In addition, whereas no difference in intelligence is found when the congenitally and adventitiously deaf within the school population are compared, a difference of 13 IQ points in favor of the adventitiously deaf is found when such a comparison is made within the Problem Group.

Whether the lower IQ is the important factor in the behavioral disturbances of these congenitally deaf children or whether the factor responsible for the deafness in these particular cases may also be responsible for the behavioral disturbances and lower IQ, is a provocative question and one upon which no opinion can be ventured at the present time. However, as a result of these findings, a reasonable

surmise may be made concerning the basic mental attitude of these two groups of children in their reactivity to problem-provoking situations. It would seem very likely that differences would be found in ability to handle problems, in basic factors responsible for the problems, and in degree of insight on the part of the child into the problem-situation.

Factors Relating to the Deafness: Cause of Deafness.—Investigation into the proportion of congenitally and adventitiously deaf children within the Problem Group reveals the group to be a typical replica of the school population in this respect. In each, the congenitally deaf are represented by about 67% of the pupils, the adventitiously deaf by about 33%. By far the most outstanding disease responsible for deafness after birth was found to be meningitis. This is the causative disease-factor in 50% of the cases of adventitious deafness in both the School Population and in the Problem Group.

The belief held by some workers that the congenitally deaf are better adjusted than the adventitiously deaf is not positively confirmed by these findings. Positive confirmation would require a smaller representation of the congenitally deaf within the Problem Group than within the School Population. However, there may be qualitative differences in adjustment between the two groups as yet unrevealed.

Age of Onset.—The age of onset of deafness is concerned with those who became deaf after birth. Of the total school population, the ages at which these children became deaf range from 1 month to 14 years inclusively. The median falls at 2 years. The age range of such children within the Problem Group was found to extend from 6 months to 7 years inclusively, with the median at 3 years. As can be seen, the range of the school population is a much wider one than is that of the Problem Group.

If these findings are confirmed by other studies, this difference of one year in age of onset of deafness between the two groups may take on added significance, particularly when the ages themselves are considered. Common observation bears out the psychological findings concerning the tremendous growth of the child both mentally and physically

from birth to the age of about 5 years. The enormous changes from year to year at this level are not duplicated at any other period of the child's life. Thus, whether deafness occurs a year earlier or a year later during this age span may well play an important part in establishing the child's later adjustment potentialities.

The findings indicate that the Problem Group has suffered deafness a year later than has the general School Population. It is interesting to note in this connection that Dr. Lily Brunschwig in her work on the standardization of the Adjustment Inventory for Deaf Children found that her supplementary male group deafened before the age of one averaged significantly better scores than did those deafened later. It may well be that the emotional trauma produced by deafness has a more serious effect upon the more highly developed faculties of those children deafened at a later age. Extensive data are required in this area in order to evaluate the effects of sudden deafness at various age levels in the lives of young, rapidly developing children.

Hearing Loss.—A comparison of the median hearing losses of the Problem Group and of the School Population was undertaken in order to seek evidences of a possible relationship between the amount of residual hearing and adjustment. No such evidences could be found, however, the median hearing losses of each group being 91 db.

Having Deaf Relatives.—It might be expected that deaf children coming from families having other deaf members would receive the benefits of insight and understanding denied to children who are the only deaf members of hearing families. The quantitative findings of the survey would tend to corroborate this surmise, for although about 34% of the school population were found to have deaf relatives, only 24% of the Problem Group could be so classified. A comparison of the congenitally deaf groups reveals an even more striking deviation, for whereas 53% of the congenitally deaf within the school population possess deaf relatives, only 30% within the Problem Group come from families having other deaf members.

The findings with respect to the adventitious groups,

however, are not in accordance with the natural expectations. We find here the reverse situation—a greater proportion of the children in the Problem Group having deaf relatives (12%) than in the School Population (7%). This presents still another deviation as yet to be verified and explained.

Factors Relating to Social Opportunities.—The ages of the pupils comprising the Problem Group range from 6 years to 20 years inclusively, with the median at 14 years. The median of the school population falls at about this age and, excluding the Nursery and Preschool grades, covers the same range. It would seem logical to expect adolescence as the focal age-point of a school's problem group.

All but three of the Problem Group are pupils in residence at the school as is the large majority of the school population. The median length of time in school of the Problem Group is 9 years. This compares favorably with the median length of time in school of the average school child of the same age as the median age of the group. Over 70% of the Problem Group spend week-ends and holidays at home. Five children are taken home less than once a month; the remainder are home for holidays and once or twice a month besides.

The socio-economic level of the homes of this group is about that of the school population. However, other problems concerning the home seem to be more prominent for the Problem Group. More detailed investigation concerning the relationship between these problems and the emotional well-being of the child will fall within the scope of Individual Analysis.

Physical Factors: Other Physical Defects.—The findings of the survey show a similar proportion of physical defects in addition to loss of hearing among the Problem Group as among the School Population. About 25% of each group is so affected. Time did not permit an evaluation of the relative medical seriousness of these defects nor investigation into the antecedent disease histories. Observation would seem to indicate, however, that those defects present among the Problem Group are in themselves not so serious as are many occurring within the School Population. This, of

course, does not take into consideration the effect of a physical defect, no matter how minor, upon the child himself. The emotional reaction may be out of all proportion to the insignificance of the defect. This aspect of the study will be further investigated in the later analysis.

The other physical defects found among the Problem Group are as follows: 1) Heart murmur—3 cases; 2) Neurological—2 cases; 3) Poor vision—3 cases; 4) Obesity—

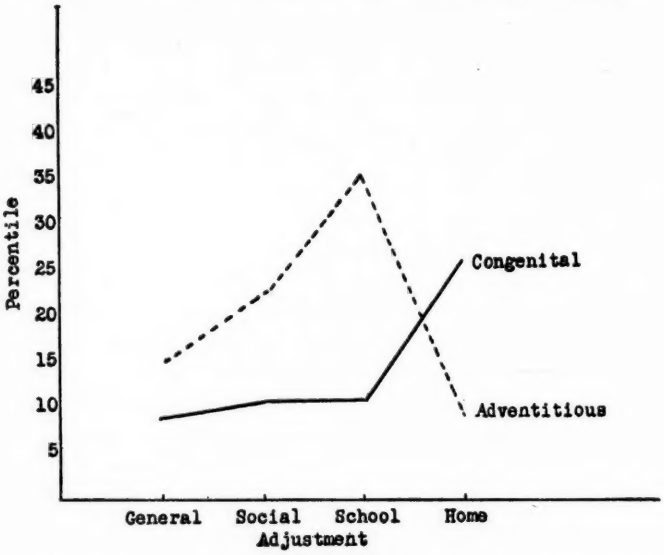

FIGURE I

Median Scores on Brunschwig Adjustment Inventory for Congenitally and Adventitiously Deaf Problem Children

2 cases; 5) Extremes in height—2 cases (one very tall and one very short).

Handedness—Much attention has been given to the manner in which left-handedness may operate as a possible causative factor in cases of subject disabilities, particularly in reading and writing. Not so well known, perhaps, are the studies of left-handedness in relation to behavior problems. The findings of such investigations indicate that a positive relationship does exist, and, to quote Cyril Burt, eminent English authority on problems of children, a higher incidence

of left-handedness is found among those children who, regardless of IQ, are "temperamentally neurotic."

Time did not permit a detailed study of the hand-preferences of our group. The writing hand preference alone was chosen as the criterion of handedness, and on this basis it was found that 6% of the school population is left-handed. (The nursery and preschool grades were not included in this estimate, the percentage of left-handedness among these very young children being much higher, about 29%.) The incidence of left-handedness among the Problem Group, on the other hand, was found to be 15%. This would seem to confirm the data presented by those investigators who have shown a positive relationship to exist between left-handedness and behavior problems.

One very interesting fact came to light when the relative proportions of the adventitiously and congenitally deaf within the left-handed group were estimated. Of the 6% estimate of left-handedness among the school population, over 5% represent the congenitally deaf; less than 1% the adventitiously deaf. Of the 15% estimate among the Problem Group, all represent cases of congenital deafness.

Types of Reactions and Problems.—The types of reactions and behavior problems here presented have been compiled from the material included in the rating scale reports of the teachers and counselors. Wherever possible, these reports have been studied and compared for each case and only those symptoms, reactions and complaints confirmed by both sources have been accepted for presentation at this time. While it was impossible to ascertain with accuracy the length of period these children have presented problems in adjustment, the sources agree that the large majority of them were problems for a considerable period of time preceding this survey.

By far the most outstanding causes for complaint were revealed to be temper tantrums, defiance of authority, boldness and stubbornness. Fluctuations of mood alternating between elation and depression followed close behind as the next most outstanding symptom of emotional unbalance. Next in rough order of frequency of occurrence were the

following: Daydreaming, indifference to school work, unpredictability of performance within the classroom, difficulty in self-expression, bullying other children, aggression, "show-off," extreme lack of initiative—slovenliness, hypochondriasis, lying, sex problems. Inability to co-operate in group activity characterized the large majority of these children, a small percentage being openly rejected by the group. The desire for leadership existed in almost 50% of the cases, about 20% being active group leaders.

Differences in behavioral trends between the congenitally and adventitiously deaf as groups within the Problem Group were not revealed by the Rating Scale reports. However the Brunschwig profiles of the median scores of each of these groups on the Adjustment Inventory for Deaf Children does show an interesting distinction. In every area but one, the congenitally deaf score lower than do the adventitiously deaf. Their highest score and the one in which they are outstandingly superior to the adventitious group falls in the area of Home Adjustment. It is in this field that the adventitious score poorest. Their best score is made in School Adjustment.

Summary of Group Comparisons

A comparison of the Problem Group and the general School Population was made in order to ascertain whether marked deviations could be found to exist between these two groups with respect to the following factors: The IQ, cause of deafness, age of onset, hearing loss, having deaf relatives, chronological age, how long in school, resident or day pupil, how often home, other physical defects, handedness, behavioral tendencies.

The resultant findings indicate that certain deviations do occur not only upon comparison between the Problem Group and the School Population, but also between the congenitally and adventitiously deaf when studied as separate groups. Table II presents the findings in those areas where deviations were most marked.

In conclusion, may we say that the deviations found to exist among the groups studied cannot at the present time

be used as the basis of generalizations without confirmation by other studies. It is hoped, rather, that these findings will provide additional stimulus for further much needed investigations. For our part, we realize that the range of individual differences presented by children and the intricate and novel combinations in which they appear defy group analysis. This present study has barely touched

TABLE II

A COMPARISON OF THE PROBLEM GROUP AND SCHOOL POPULATION SHOWING THE DIFFERENCES IN AREAS OF GREATEST DEVIATION

Factors	*Problem Group*			*School Population*		
	Total Group	*Congenital*	*Adventitious*	*Total Group*	*Congenital*	*Adventitious*
Median IQ	94	88	101	99	99	99
Median Age Onset	—	—	3 years	—	—	2 years
Percentage Having Deaf Relatives	24	30	12	34	53	7
Percentage Left-Handedness	15	15	0	6	5	1
Median Percentiles of Brunschwig Adj. Areas — General	—	8	13	—	27	32
Median Percentiles of Brunschwig Adj. Areas — Social	—	10	22	—	30	32
Median Percentiles of Brunschwig Adj. Areas — School	—	10	35	—	40	70
Median Percentiles of Brunschwig Adj. Areas — Home	—	25	6	—	35	35

the complexity of factors entering into the child's psychoreactional make-up. Yet even so, deviations resulting from differences in capacity, background and experiential history become apparent. It is time that the deaf child emerged from the anonymity of deafness to challenge consideration as an individual possessing his full measure of individual differences.

The next phase of this investigation will deal then with an exploration into the individual histories of each member of our Problem Group.

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A Comparison of Congenital and Adventitious Deafness with Respect to Its Effect on Intelligence, Personality, and Social Maturity—Part II: Social Maturity[1]

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Congenitally Deaf Compared with Adventitiously Deaf.—In a validation study of the Vineland Social Maturity Scale at the New Jersey School for the Deaf, Bradway (1) used ninety-two subjects ranging in age from five to twenty-one years. She obtained a mean SQ of 80.7 for the group with a SD of 11.3, and concluded that the deaf are retarded approximately 20 SQ points in social competence.

The findings of the experiment herein described are in close agreement with the results obtained by Bradway (1). A comparison of mean results obtained from the adventitiously and congenitally deaf groups is presented in Table VI.

TABLE VI
A COMPARISON OF MEAN SOCIAL QUOTIENTS FOR CONGENITALLY AND ADVENTITIOUSLY DEAF CHILDREN

Group	N	*Mean SQ*	SD	*Mean diff*	SD *diff*	*Critical Ratio*
Congenital	54	85.0	17.5	2.60	2.90	.89
Adventitious	50	82.4	12.1			

[1] In Part I, March ANNALS, pp. 140-154, the authors consider the problem of difference in intelligence between children who are congenitally deaf and those with adventitious deafness. Their findings indicate no significant difference in this respect, though deaf boys tend to stand slightly higher in intelligence than do deaf girls. Nor was there a significant difference between a group of deaf children resident in a school for the deaf more than four years and another group of less than four years residence in such a school.—*Editor,* ANNALS.

The mean SQ for the adventitiously deaf is 82.4 with a SD of 12.1. The mean SQ for the congenitally deaf is 85.0 with a SD of 17.5. The mean difference between the two groups is 2.60; the standard error is 2.90, and the critical ratio, .89.

There is not a statistically reliable difference between congenitally deaf children and children who have acquired deafness. There is, however, a retardation in social maturity for both groups ranging from fifteen to eighteen points. Streng and Kirk (3) found no retardation for fifty-one deaf subjects in attendance at a day-school. The cases studied by Streng and Kirk were of average intelligence, making them comparable to the cases reported on in this experiment. The Grace Arthur Performance Scale was used in this study and also in the study by Streng and Kirk. The mean hearing loss for the subjects used by Streng and Kirk was seventy-one decibels, making them comparable also in this respect to our population. It seems, therefore, that the difference in social maturity between deaf children attending a day-school and deaf children attending a residential school cannot be accounted for on the basis of intelligence or differences in degree of hearing loss. These results suggest that day-schools either train deaf children more successfully to be socially mature or select children who are more socially mature.

The congenitally deaf are somewhat more variable than the adventitiously deaf in social maturity. The adventitiously deaf are very similar in variability to the hearing group used by Doll in standardizing the Vineland Social Maturity Scale. The difference in variability suggests that the congenitally deaf in infancy are very inferior in social maturity. However, in later years many of the congenitally deaf do succeed in becoming quite socially mature, thus making the group scatter between very low social competence scores and scores which are above average.

A comparison of the social ages for both groups is presented in Table VII.

TABLE VII
A COMPARISON OF MEAN SOCIAL AGES FOR CONGENITALLY AND ADVENTITIOUSLY DEAF CHILDREN

Group	N	*Mean SA*	SD	*Mean diff*	SD *diff*	*Critical Ratio*
Congenital	54	11.37	2.2	.57	.47	1.20
Adventitious	50	11.94	2.5			

The mean social age for the adventitiously deaf is 11.94 with a SD of 2.5, and the mean social age for the congenitally deaf is 11.37 with a SD of 2.2. The mean difference is .57, the standard error .47, and the critical ratio 1.20. The two groups are very similar in mean social age and in variability.

The distribution of social quotients for the adventitiously and congenitally deaf groups is found in Figure 6.

Scores for the cases of acquired deafness range from an SQ of 50 to one of 110, and scores for the congenitally deaf range from 40 to 110. The characteristics of the curves are similar. However, it is to be noted that seventeen congenitally deaf children obtained a SQ of 90, whereas only ten cases of acquired deafness obtained this score. We note also that fifteen adventitiously deaf children obtained a SQ of 80, but only nine congenitally deaf cases obtained this SQ. These are the only two noticeable departures of the two curves. However, since these differences are slight and in opposite directions, they cannot be considered significant.

The distribution of social ages for these two groups is presented in Figure 7. There are only slight variations in the characteristics of the curves. The adventitiously deaf range in social age from seven to nineteen years, and the congenitally deaf range from eight to nineteen years.

Sex Differences.—In the validation study on the Vineland Social Maturity Scale, Doll found no evidence of a sex difference. Bradway (1) also found this was true with her ninety-two deaf subjects.

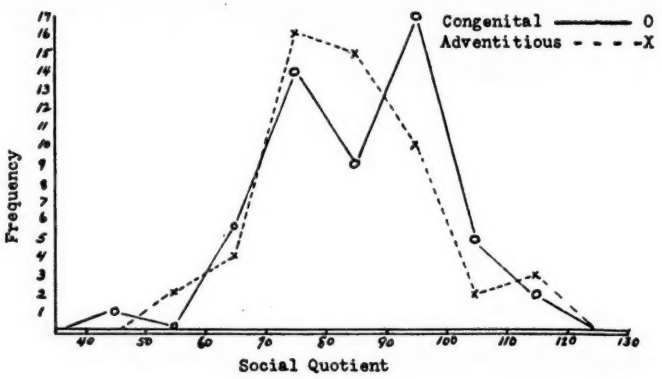

FIGURE 6

Distributions of Social Quotients on the Vineland Social Maturity Scale for Congenitally and Adventitiously Deaf Children

A comparison of the mean social quotients for fifty-three males and fifty-one females studied in this experiment is presented in Table VIII.

TABLE VIII

A COMPARISON OF MEAN SOCIAL QUOTIENTS FOR MALES AND FEMALES

Group	N	*Mean SQ*	SD	*Mean diff*	SD *diff*	*Critical Ratio*
Males	53	86.3	13.3	4.66	2.56	1.8
Females	51	81.6	12.9			

These results are in agreement with those of Doll (2) and Bradway (1). The mean social quotient for the males is 86.3 with a SD of 13.3. The mean social quotient for the females is 81.6 with a SD of 12.9. The mean difference is 4.66, the standard error 2.56, and the critical ratio 1.8. There is not a significant difference between the sexes, but the males are somewhat more variable in social competence than the females. Both groups are more variable than Doll's original distribution in which he obtained a SD of 12.

Table IX presents the mean social ages for the fifty-three males and fifty-one females.

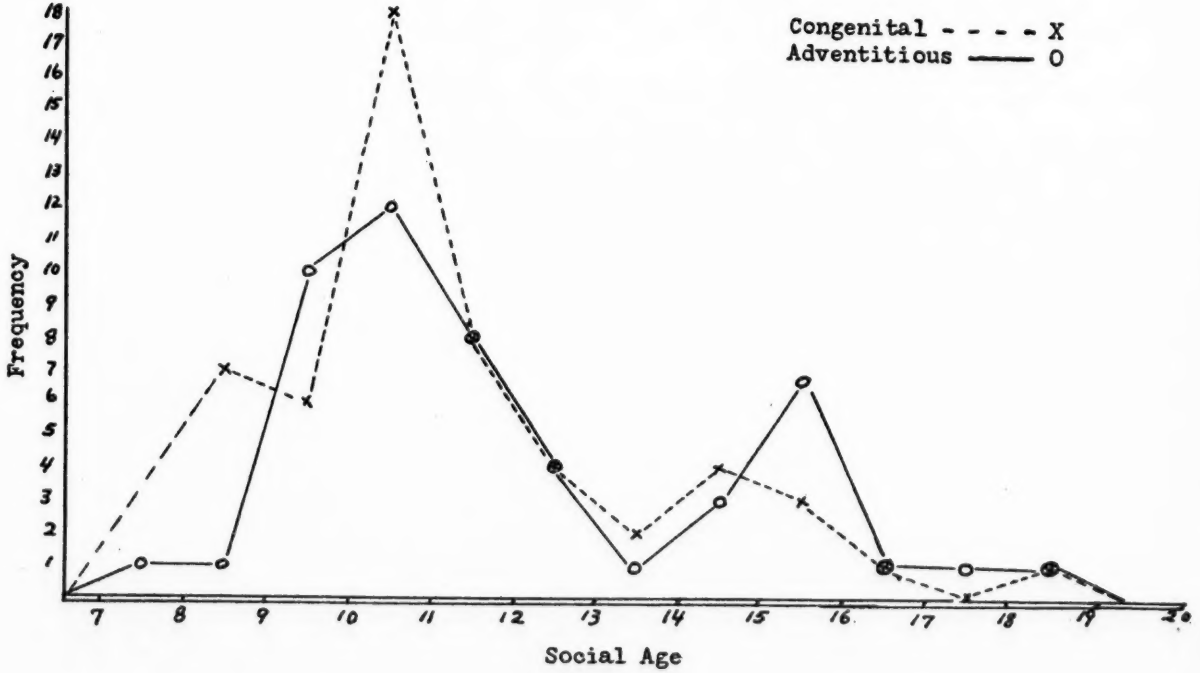

FIGURE 7
Distributions of Social Ages on the Vineland Social Maturity Scale for Congenitally and Adventitiously Deaf Children

TABLE IX
A COMPARISON OF MEAN SOCIAL AGES FOR MALES AND FEMALES

Group	N	*Mean SA*	SD	*Mean diff*	SD *diff*	*Critical Ratio*
Males	53	11.67	2.1	.06	.46	.13
Females	51	11.61	2.6			

The mean social age for the males is 11.67 with a SD of 2.1, and the mean social age for the females is 11.61 with a SD of 2.6. The mean difference is .06, the standard error .46 and the critical ratio .13. There is no significant difference between the males and females in social age.

The distribution of social quotients for the males and females is presented in Figure 8. The range of SQ's for the females is from 40 to 110 and the range for the males is from 50 to 110. Figure 8 shows that the spread of the curves is similar, but separate peaks exist for each curve. Eleven females and sixteen males obtained a SQ of 90 while eighteen females and twelve males obtained a SQ of 70. Thus the peak for the females is at SQ 70 and the peak for the males is at SQ 90. However, since the critical ratio, as shown in Table VIII, is 1.8 for the SQ, and since the mean social ages are practically identical, we cannot conclude that a real difference exists between these distributions.

The distribution of social ages for the deaf males and females is shown in Figure 9. The males are "grouped" considerably more than the females. The peaks are similar for both sexes but the females show a gradual decline in the curve, while the curve for the males drops somewhat abruptly, then curves slightly upward again and stops at a maximum social age of sixteen. The maximum social age for the females is nineteen.

These figures indicate that the boys are somewhat more mature when they enter a residential school but after reaching a social age of approximately eleven, they show little increase in social maturity. The distribution for girls indicates a more gradual growth in social maturity, and more females attain average social ages.

Comparison of Groups of Deaf Children Who Have Been in Residence More Than Four Years and Less Than Four years.—This comparison is made between deaf children who have been in residence more than four years and deaf children who have been in residence less than four

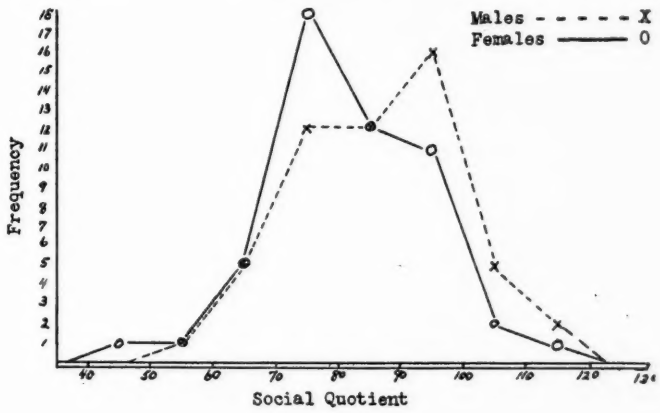

FIGURE 8

Distributions of Social Quotients on the Vineland Social Maturity Scale for Deaf Males and Females

years, in order to determine whether the group which has the longer period of residence shows any greater social maturity. If residential schools for the deaf are adequately training the children in social competence, the children who have been in residence for the longer period should show less retardation in social maturity.

The results of this comparison are presented in Table X.

TABLE X

COMPARISON OF MEAN SQ FOR DEAF GROUPS IN RESIDENCE MORE THAN FOUR AND LESS THAN FOUR YEARS

Group	N	*Mean SQ*	SD	*Mean diff*	SD *diff*	*Critical Ratio*
More than four years	53	81.2	12.6	5.74	2.5	2.29
Less than four years	51	86.9	13.4			

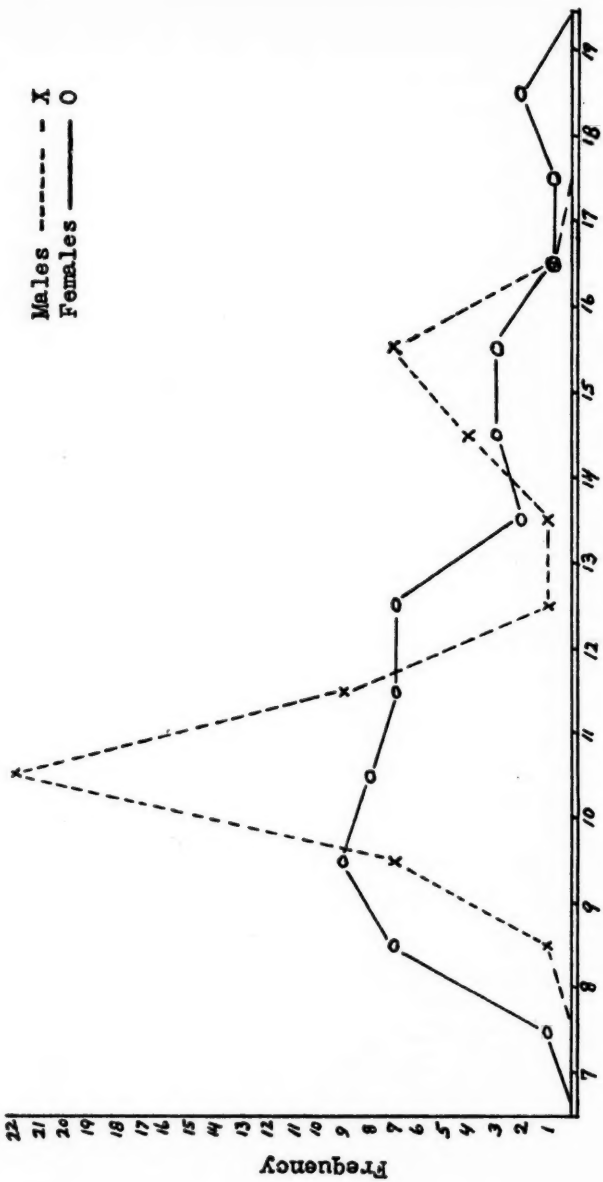

FIGURE 9
Distributions of Social Ages on the Vineland Social Maturity Scale for Deaf Males and Females

The mean social quotient for the "more than four" group is 81.2 with a SD of 12.6. The mean social quotient for the "less than four" group is 86.9 with a SD of 13.4. The "less than four" group is somewhat more variable. The mean difference is 5.74, the standard error 2.50, and the critical ratio 2.29. There is no significant difference between these two groups. These data tend to support the view that deafness itself, rather than length of institutional environment is the cause of retardation in social competence. On the basis of these results it seems that residential schools for the deaf are neither training nor retarding the children with respect to social maturity. An analysis of the items failed on the Vineland Social Maturity Scale indicates a need for instruction in certain phases of social activity such as buy-

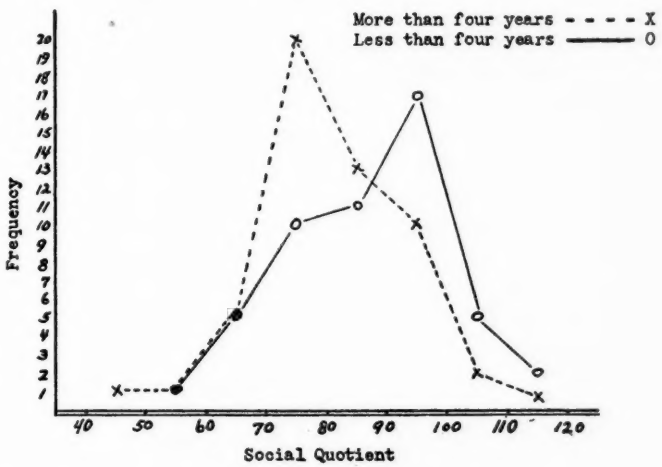

FIGURE 10
Distributions of Social Quotients for Groups of Deaf Children in Residence less than Four Years and more than Four Years

ing of merchandise, use of table utensils, and care of dress.

Comparison of social ages for these two groups was not made because such a comparison would be confounded with the factor of chronological age. The "less than four" group is, of necessity, made up of children considerably younger than those in the comparative group.

The distribution of social quotients for the "more than four" group and the "less than four" group is given in Figure 10. Children who have resided at a residential school for more than four years range in social quotient from 40 to 110. The peak of the distribution for this group is at SQ 70. Children who have resided less than four years in a residential school range from an SQ of 50 to one of 110. The peak of the distribution for this group is at SQ 90. There is, however, so much overlapping of the two distributions that these deviations cannot be considered to be real differences.

Summary and Conclusions

Information was secured for the Vineland Social Maturity Scale on one hundred and four deaf subjects. These results indicate a retardation in social maturity of from fifteen to twenty points. The deaf children in residence less than four years have the higher mean SQ, and the children in residence more than four years have the lower mean SQ. The difference between the highest and lowest reported mean SQ is 5.7 SQ points.

Subjects having acquired deafness were compared with congenitally deaf subjects. No significant difference in social maturity was found between these groups.

There was no evidence of a difference in social competence between deaf males and females.

Children who had been in residence at a school for the deaf less than four years were compared with children who had been in residence more than four years. This comparison made it possible to secure information regarding effects of institutionalization. No significant difference in social maturity was found between these two groups. These data support the view that residential schools are not adequately training children in social competence. Instruction emphasizing social training is indicated.

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(To be concluded)

The Pupil's Case—II[1]

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[*Note.*—In the first part of this article, the author discussed the language situation with respect to the deaf from the standpoint of the teacher's lack of qualification to teach the content of the English language. Although the author does not minimize the difficulties to be met because of deafness, she maintains that lack of qualification to teach the content of language is one of the chief causes, if not the chief cause, of the mixed language and lack of language comprehension found among the deaf.—*Editor,* ANNALS.]

LET US examine this fragmentariness which characterizes our language work with the deaf. What is its nature? What are its effects upon the pupil's language? To what extent does it exist?

The following analysis, which covers a few of the most neglected divisions of the work and takes the beginning of the usual eighth grade as the point of application, illustrates the situation. Emphasis is lent to the condition by the fact that one finds practically the same condition upon making contact with the ninth grade. In other words, there are many language principles and other language facts necessary to a balanced development of language which do not come under the teacher's consideration below these grades.[2]

FUNDAMENTAL CONSTRUCTIONS

Strangely enough, there is often much work to be done on simple fundamental constructions. The writer considers seven constructions as fundamental, or as "foundation sentences": The intransitive verb; the transitive verb; the indirect object and its phrase-equivalent; the verb-adverb construction; the predicate objective—noun and adjective; the attribute complement, or predicate adjective and predicate

[1] Continued from the ANNALS for March, 1942, pp. 114-122.

[2] The writer is giving conditions as she has found them. Nothing which she has seen in various schools and from pupils from yet other schools has indicated that the conditions given in this article are not practically universal. Some schools may do a little better; others, slightly worse. Exceptional groups do better. It is the average condition which is under consideration here.

nominative; the passive form. Although this is an extension of the classification by grammarians, the writer has found it advantageous because of the importance of these constructions and the drill work necessary on them to treat all of this group as foundation sentences.

When one realizes that these constructions in their simple, unmodified form are the basis of all language, that the work in simple sentences is merely carried over into clauses and into infinitive and participial phrases, that all modifiers are only additions to them, and that these facts may be shown simply and clearly to the pupil, the value of these constructions and the importance of teaching them early become clear. Stressing these facts in the lower grades would greatly simplify language for the pupil.

With respect to these constructions, one finds—

Taught:

Intransitive verb construction.

Transitive verb, or the construction with a direct object.

Partially, all other constructions except the predicate objective. Rarely have pupils any knowledge of the construction with a predicate objective.

Work yet to be done:

Predicate objective. (He painted the ball red. Jane got her shoes muddy. We elected Harry captain.)

Additional work on the verb-adverb construction, particularly in distinguishing between the two forms. (She took off her coat. I hung it up.)

Additional work in distinguishing between the indirect object and its phrase-equivalent. (Lucile gave Jane a ball. Jane lent it to me.)

Additional work on the predicate nominative; generally common vocabulary and the much-used classification under WHAT.

Work on the simple uses of the passive voice, as well as the more difficult uses. (Fred was hurt in the accident. She may have been invited, but she was not there. He would have been promoted if he had studied.)

Comparison

One finds this situation in comparison—

Taught:

Comparison applied to predicate adjectives. Many groups have very little definite knowledge of this use.

Rarely, some idea of comparison of adverbs of manner.

Work yet to be done:

Comparison of adverbs of manner. (See *Taught.*) This work usually includes distinguishing between predicate adjectives and adverbs of manner.

Comparison applied to factitive adjectives (predicate objective). (Frank made his box larger than mine.)

Comparing a person with himself or a thing with itself under different conditions or circumstances. (It is warmer in Florida than in New York. It is more pleasant in the spring than in the summer. Louise looks better in blue than in pink. She is getting better every day.)

Comparison applied to adjective modifiers. (Harry has a more interesting book than mine. George does better work than John. A stronger boy than Frank is needed for this job.)

Comparison of adverbs of degree with respect to action and with respect to feelings, sentiment, mental activity and the like. (She talks more than he does. I like this better than that. She thinks more about her work than Mary. I enjoyed the picnic as much as the dance.)

Comparison with adverbs of degree and adverbial nouns to supplement the usual combinations used in comparison. (Billy studies somewhat more than Mike. This is very much better than that. Lucile is two inches taller than Cecile. I drove two hundred miles farther today than yesterday.)

Comparison as to number and amount. This is one of the most neglected topics in language—and one of the most needed.

Comparison involving the infinitive and the expletive *it.* (It is more pleasant to ride than to walk.)

Months of hard work, even with a very intelligent class, must be done in order to give the pupils a fair understanding of the many uses of comparison which remain to be taught. This condition is not easy to understand, as any given use is not difficult to teach, with the exception of a few uses of comparison as to number and amount. It does take a great deal of repetition to secure retention of the ideas involved and care to prevent confusion if one use is followed immediately by another.

How Much

Notwithstanding that *how much* is just as important in a language sense as *how many,* the former is given very little attention in the lower grades if one may accept results as indicative. In a way this is understandable, as in no other phase of language teaching is knowledge of the subject more necessary. The several uses of the words and phrases which tell how much, as adjectives, as adverbs, as pronouns, and in certain cases as nouns, make them a very complex affair when all the facts are known by the teacher and a rather hopeless one when they are not. The fact that as adjectives they are used with nouns which, for lack of a better term, we shall call quantitative nouns, adds to the difficulty. (The writer sometimes wishes that the English language had three numbers to take care of these nouns which never or do not generally have a plural form.) Although there are not many of these words and phrases which tell how much, the work is further complicated in that the full list is not applicable to each use.

The situation in respect to *how much* is usually as follows:

Taught:

As adjectives (incomplete).
As pronouns (incomplete).

Work yet to be done:

Said of actions—the degree of activity.
As modifiers of predicate adjectives.

As modifiers of adverbs.
To supplement the usual correlatives used in comparison (see COMPARISON).
In relation to mental activity and emotion.
With past participles used as adjectives.
Adverbial nouns which tell how much.

TENSE

One finds great differences in opinions with respect to the teaching of tense. This comes from the erroneous idea that tense forms do not indicate the time of the action. A number of uses may be marshaled rather convincingly to substantiate this if one does not understand that tense forms in certain cases have underlying meanings which indicate the time-division to which the action belongs. To illustrate, we use the past subjunctive in reference to present time to indicate the hypothetical nature of the expression; we use the present tense in reference to future time to indicate definiteness of plan or arrangement; we use *is going to* as an auxiliary to indicate present intention as to future time; and so on. The writer knows of no instance in which the tense form does not indicate, within the sense of the expression, the time-division to which the action belongs.

Time-phrases indicate points or, as in the case of the present perfect tense, periods of time within the time-division, and they are necessary to a clear understanding of the connection between tense form and time. It is doubted that tense can be taught thoroughly and understandingly without associating the tense form with the time-phrase.

The condition is almost always quite inadequate for tense needs. As it stands, we find:

Taught:

Present tenses—present and present progressive (incomplete).
Past tenses—past and past progressive.
Future.
Some work on the present perfect tense.
Some work on passive forms.

Work yet to be done:

Generally a great deal of work to be done on the present tense, particularly that it is generally used in an habitual sense.

Work on the present progressive tense—that it is used not only to express what is going on at the present moment but also in reference to periodic action on unfinished tasks. (Mary is talking to Frank. Harry is making some book ends.)

A great deal of work on the present perfect tense.

Past perfect tense.

Tense forms used in the subjunctive mood.

Future tenses—future progressive and future perfect.

A great deal of work on the various tense constructions of the passive voice.

Potential forms—tenses, meaning and use.

One could go on indefinitely: Uses of common prepositions, of infinitives, of participles—one of the most neglected phases of the problem; the various applications of indirect discourse, particularly indirect questions; questions; clauses and uses of various other elements and classes of words.

Doubtless, a few of the simpler language principles indicated here on the adverse side of the slate are presented in the lower grades. Either these principles are not given enough attention or the teacher does not provide opportunities for their use and they are forgotten. Although thoroughness of knowledge on particular principles may vary a great deal, the small degree of variation which one finds in the line which separates what has been taught and what has not been taught is surprising. An assumption that our skeletonized courses of study in language indicate all that should be taught has something to do with this primarily, but lack of that knowledge of the English language which would enable teachers to interpret each indication at its full meaning—to see each part, each use or application, as in, shall we say, comparison, and to make intelligent selections in the progressive development and use of the language fact or principle—this is the chief cause.

Before taking up other considerations, it is here desired to bring the verb *do* out into the open. It is without doubt the most used verb in the English language. It stands for "finite verbs and for the infinitive and participle of verbs, transitive and intransitive, regular and irregular." What does the average deaf pupil know about this verb? Only of its use as an auxiliary, its use in certain questions, and usually a wrong conception of its use in emphatic answers. This is not necessary; with its uses isolated and outlined, it is not beyond our power to teach these uses, most of them in the lower grades.

It is obvious that the teaching of the greater part of language principles and other language facts falls upon the advanced department, in addition to the number of content subjects to be taught.

This unbalanced and limited language development creates a very difficult position for the upper-grade teachers, as well as for the pupil. In the majority of cases it is not possible to give the pupil enough of the work in language which has not been taught to be adequate for his needs. The teacher being human and dealing with human beings can do only so much. How much is done depends upon the exact language condition of a group and the ability of the teachers to analyze the situation and to select the work intelligently and systematize it. How many upper-grade teachers have the knowledge of language necessary to this, or, for that matter, how many supervising teachers? How of much of the work is haphazardly selected. Knowledge of the English language is absolutely necessary to control the situation and give the pupil the best that the situation offers.

This problem of language is not for the English department alone; the pupil needs help at all times. Whether the teachers realize it or not, each department becomes a passive, inffectual part of the program, or, when it chooses, an active, effective part. Regular programs of co-operation made out by the teachers themselves would improve the situation.

All upper-grade teachers are familiar with the pupil's ef-

forts to make what he knows, what he thinks he knows, and what he guesses at, serve his purpose. The following mistakes represent efforts of this type, including some of the worst.

"Paul was careless in spilling with his dark ink." A compound predicate or the elimination of *with* is indicated, depending upon the pupil's meaning, which it is necessary to ascertain.

"Lupe cut off Mrs. Smith's dress of the hem end." An effort to use the idea involved in partitives: "Lupe cut off the hem of Mrs. Smith's dress."

"I laughed at Virginia bumped into the door." An attempt to say, "I laughed when Virginia bumped into the door" or "I laughed at Virginia's bumping into the door." Most probably it was the action, not the idea, which amused the pupil.

"She bought a pretty picture of herself for me than Ruth." Comparison of adjective modifiers is needed by the pupil; also that in comparison involving prepositional phrases in this sense both phrases should be complete —for me than for Ruth. There is the possibility that the pupil meant to say, "She bought me a prettier picture of herself than Ruth did," although the expression is somewhat vague as interpreted. It is often necessary to ask a pupil what he means before making a correction.

The next sentences are efforts to use comparison.

"I do not like so good milk as coffee." I do not like milk so well as coffee.

"I like so good candy as ice cream." I like candy as well as ice cream.

"William did not read so a book as Roy." This is obviously an effort to use the idea involved in adverbs of degree: William did not read books so much as Roy (or, William did not read a (his) book so much as Roy (did his).

"Pauline did not think so a cake as Jane." In sentences such as this it is very difficult to determine what is meant without consulting the pupil. "Pauline did not

think as Jane did about the cake" is probably the thought behind the expression, although *think so* has been seen used for *think that.*

Then we have the sentence which is correct in structure, but which does not express the pupil's thought.

"Mary hates to be frozen." Naturally, Mary had never been frozen, and we may in this case discount exaggeration for emphasis. "Mary should hate to be frozen" is doubtless the thought intended to be expressed, although one may wonder what put such a thought into the pupil's mind. This use of *should* is indicated for teaching.

"She picked out her pet turtle from the bowl." This sentence indicates an intelligent effort by the pupil to make what she knew serve her purpose. She used a verb-adverb combination and *from* because she did not know *out of* and this application of *take:* She took her pet turtle out of the bowl. The use of *picked* instead of *took* might be defended under certain circumstances not likely to be associated with the action expressed.

The next sentence is an effort to make *so . . . that* do the work of *so that* in an expression of purpose.

"He studied so hard for several years that he could improve or promoted when he went to college." This sentence indicates several things. The pupil has extended his standards of excellence to college life, using elementary terms; he has used one principle to express a thought which requires another principle to express it correctly; and he has used the passive voice incorrectly.

A person who did not know the circumstances—that the pupil was speaking of a former pupil who had recently entered college, and that he could not possibly know whether the former pupil was doing his work in college successfully—would quite naturally regard the last clause as an expression of result and the sentence as very nearly correct. Sometimes it is necessary to take several things into consideration in order to determine the real thought behind the pupil's expression.

> This pupil had been taught the uses of *so . . . that* with clauses of degree or result, but not *so that* with clauses of purpose or with clauses of result. The correct interpretation of his thought is: He studied hard for several years so that (that, in order that) he might (should be able to) do the work when he went to college (while he was in college).

Any teacher who is a student of the English language knows that there is more behind such errors than the primary one of deafness. She sees fragmentary knowledge of language principles, the result of fragmentary efforts in language teaching. She sees in them, again and again, not the expression of a slow drifting pupil, but the adventures of an aggressive, daring mind into all kinds of expression, known and unknown.

Aside from expression and ultimate language ability, there is an additional reason why more language principles and other language facts should be taught in the lower grades, *i.e.*, reading.

In these grades, especially, particular meanings as denoted by the various constructions of language and the vocabulary which distinguishes them are vital to reading. Taking the natural retardation measured by grades as normal for the deaf, we will find that the deaf pupil is often poor in reading because he has not had these principles and facts with their associated vocabulary.

Practically every language principle and other language fact found in simple sentences are accompanied by their own particular vocabulary. With this vocabulary carried over into infinitive and participial phrases and into clauses, we have its influence throughout language. Often the class of words is the only distinguishing feature about the language fact, and this class of words will not be understood or used unless the fact is taught.

Learning to read by reading, plays its part, but that is not enough.

We hear this argument against special consideration being given to vocabulary: "But I know many pupils who have extensive vocabularies, and they cannot read." So

what? There must be particular vocabulary, much of it the common, everyday vocabulary which distinguishes, or is associated with, language principles and other facts. In many cases this is a group of verbs, the dynamic, assertive element of the sentence, the element which gives the sentence life and meaning.

One might have an extensive vocabulary and know only the transitive-verb construction with its word and phrase modifiers. How far would that get one in reading? Not very far. The wonder is that the deaf pupil reads as well as he does, considering the fragmentary nature of his language work.

The writer is aware that this is only one of the problems in reading; that, in addition to this lack of the right kind of vocabulary, we must deal with the same causes as those responsible for non-reading in the public schools. However, we cannot apply these causes to the great majority of deaf pupils. Why do more rationalizing? Why not face the facts of language? Methods in use today are an advantage, more effective than those used formerly. But again methods apart from the right kind of material are not enough. Pupils must have reading readiness, the right kind of vocabulary. A suggestive fact is this: A pupil who has a well-balanced vocabulary may not be able to read because of non-reading ability, but the pupil who has not this well-balanced vocabulary cannot read well however great his natural ability may be.

We have examined the pupil's case against the profession, taking the English language itself as the basis of judgment. We find that, although it has the right conception of what a system, or method, should do, the profession has ignored to a great extent the demands of the language itself; that the profession has drifted with the public schools in their attitude toward grammar, not recognizing or ignoring the fact that this in no way applies to a teacher of a language. We find that teachers of the deaf are quite generally unprepared to teach the content of the English language simply because they do not know what the principles and other facts of the language are; that the language work

done is fragmentary and unbalanced and that this is responsible for much of the mixed language and lack of language comprehension found among the deaf. The evidence further indicates that, while each teacher has a personal responsibility in the matter, the profession in general is implicated in that it has not faced the situation and provided the teachers with that thorough knowledge of the English language which is necessary in teaching the language.

The nature of the situation developed indicates that two courses are open to us.

On one hand, we may continue as we are and perpetuate the humiliating act of turning out hordes of deaf pupils without language for the simplest general needs.

On the other hand, we can dignify the English language by treating it as a subject which the teacher should know and eliminate much of the fragmentary nature of our work, even with slow groups. Fragmentariness is a condition with which we may come to grips: Certain principles and other facts are taught; other principles and facts are not taught—learn what they are and teach them. It takes no longer in the classroom to do well selected, interwoven, thorough work and to see that the pupil uses what he learns than it does to do poorly selected, disconnected, fragmentary work plus the time it takes to re-teach forgotten and incomplete work at intervals during the pupil's progress through the grades. In the one case the pupil has a fighting chance; in the other he is defeated from the beginning.

The Supervisor Should Not Argue or Quarrel with the Child

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NOT so long ago the writer came upon a scene in which one of the supervisors was arguing with one of the boys under his care. The supervisor complained that the boy was always arguing with him. However, the boy said the supervisor was always arguing with him. The supervisor charged that the boy was troublesome, always stubborn and disrespectful, that he talked back. The boy complained that nothing he did seemed to be right, that the supervisor was fault-finding, always "picking" on him. Finally, their words were such that they found they were quarreling in earnest.

The writer believes this is a serious situation. The repetition of such scenes will cause an intolerable situation in the dormitory, and may leave the supervisor and the child bitter at each other for a long time. Quarreling between the supervisor and the child is all wrong and a bad habit, a habit for which the supervisor is more responsible than the child. It takes two persons to make a quarrel, and the supervisor should know where to leave off arguing with the child. The habit of arguing or quarreling only tends to arouse feelings of bitterness and hate. Neither the supervisor nor the child is the winner in the quarrel. Both are inevitable losers.

The supervisor who comes down to the child's level and quarrels with him or her in the presence of other children will lose dignity. In addition he displays a lack of wisdom. A wise supervisor will realize that he is arguing with a child, and he will check himself immediately.

Quick-tempered supervisors should especially be more careful not to start to argue with the children, for it is through the loss of tempers that most arguments or quarrels are likely to originate. Supervisors who do not try to control their tempers or refrain from arguing or quarreling with the children should realize that nothing like arguments or quarrels so quickly and surely will kill universal

respect on the part of the children toward them. They may find it difficult to command instant obedience from children if they persist in exchanging sharp words with them. Children who have a strong memory will not forget easily if their supervisors say unforgivable things to them. It will instantly wipe out all memory of previous kindness to them. Children in residential schools prefer and respect supervisors who are gentle, witty, pleasant, and easy to get along with. There is nothing else on earth that pays such big dividends as amiability.

The Vocabulary to Teach Deaf Children

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THERE are certain words that are the easiest to teach first. It is customary to start with such words as "ball," since the object can be played with at the same time the label is presented. Soon, however, after the understanding comes to the child that words are labels and substitutes for objects and operations, and after the child learns that these labels can be fitted together into grammatical word games, then the vocabulary problem of word accretion becomes evident. There is little doubt but that the best methods for word accretion are not academic, but instead natural and through actual experiences with things, trips, etc. However, this study is to be confined to suggestions for the academic or classroom methods of vocabulary building, and is especially concerned with those words which should be learned first.

Due to the great influence studies of written vocabularies have had in the development of practical spelling lists, it seems a common misconception that words are acquired purely as a result of their frequency of occurrence. Experiments in the phonetics laboratory at Oklahoma A. and M. College have demonstrated that word frequency is not the complete picture. Thorndike's word lists were sampled and the sample from each thousand was given to 17 college students. They never reached a point where they knew all the preceding more frequent words and missed the succeeding less frequent. Furthermore there seemed to be no trend in such a direction. And beyond this, Thorndike's list in no way delved into all the ramifications of their active and passive vocabularies. This was tested by having each student study Thorndike's complete list of 20,000 most frequent words. Thus it has been concluded from these studies, that frequency of occurrence is not necessarily the natural method, or usual method, of word accretion and

that probably a multitude of other forces operates to determine which word will be acquired. On the other hand, the words it is most efficient and practical to study for spelling are in all probability precisely those which are most frequently used in writing, and probably also it is most practical to study them exactly in the order of their frequency of occurrence. In regard to reading, it should be profitable in the seventh, eighth and ninth grades to teach all of Thorndike's 20,000 words. If the pupils knew all of these, they would have a very efficient vocabulary. In fact, they would know all but five words out of every ten thousand that they would meet in any book, newspaper, or magazine. And also here it is proposed that deaf children should, as soon as vocabulary development is begun, start their study with those most frequent in speech. That this is an educational ideal directly related to the quick gaining of an efficient vocabulary achievement, will be readily understood when it is pointed out that studies from these laboratories have shown definitely that only 50 words need be taught in order to teach half of all the words used in speaking. It has been found that half the words spoken are mere repetitions of these same 50, over and over again.

The very difficult problem of arriving at the answer to what is the active vocabulary, proved to be beyond much simplification. Complex statistical computations did simplify the investigation to a point where it was found that the examination of only 100,000 words would be sufficient to give a stable sample for as many as the 1,000 most common. This is an improvement over the usual sample, which is of the order of millions. If the 1,000 most common are stable, then the fifty most common could certainly be assumed to be reliable. The next problem was to find where one could study speech. It was assumed that instructors of the deaf confined themselves for the most part to classroom procedures. Therefore, the study was set up to study 100,000 words used in the classroom recitations of, as it turned out, 245 different people. The next problem was at what age should one study speech. It was assumed that the instructors taught not for the day alone, but for the future, when their

pupils would be mature. This was very convenient, since it made possible the confinement of the study to students in college speech classes. The final problem concerning the 100,000 word sample was how to render the sample available for study. It proved to be quite simple to add to the regular classroom situation a microphone, and from time to time to make a record of the students' speech. These records were transcribed, and the reliability of the transcriptions was checked by the agreement of over .99 of several clerks. The words were then counted and the frequency of each different word within the 100,000 word sample was counted. From this tabulation, it was found that the first fifty alone made up half of all the sample. In fact, every fourth word was always one of only the nine most frequent. This analysis is shown in detail in Table I.

TABLE I
HOW A FEW WORDS ARE SPOKEN OVER AND OVER AGAIN

Number of Words	*Per Cent of All Spoken Words*
The one most common word	6.1
The 3 most common words	12.4
The 6 most common words	20.1
The 9 most common words	25.6
The 10 most common words	26.8
The 25 most common words	38.9
The 50 most common words	51.4

It has long been argued that spoken language is different from written language behavior. This has been analyzed in regard to speech sounds and proved to be true. However, it was believed that the presence of a difference in vocabulary should be checked. Should it prove that oral words and written words were identical, then it would be advisable to use the longer lists of Horn (10,000 from 5,000,000) or of Thorndike (20,000 most frequent). Table II shows that there is a difference between oral and written language of the order of 40 per cent even on the most frequent. Should oral and written language have been identical, then the first thousand most common written words would have contained

100 per cent of the thousand most common spoken words.

It was found that the thousand most frequent words included no word with a frequency of less than nine per 100,000 running words. The first thousand different words

TABLE II
COMPARISON OF ORAL AND WRITTEN VOCABULARIES

Most Common Written Words (Data from Horn)	*Per Cent of 1,000 Most Common Oral Words in Each Group*
1st 1,000	60.2
2nd 1,000	19.1
3rd 1,000	7.5
4th 1,000	6.0
5th 1,000	3.2
6th 1,000	1.0
7th 1,000	1.1
8th 1,000	.7
9th 1,000	.6
10th 1,000	.5

account for the occurrence of all but 2.2 per cent of the running words. Table III shows in detail the percentage of the total number of running words each successive 100 word group comprises. The sixth hundred in frequency makes up only 1.0 per cent of all the words in speech.

TABLE III
THE PERCENTAGE OF RUNNING WORDS IN EACH SUCCESSIVE HUNDRED DIFFERENT WORDS

Successive Hundreds	*Percentage*
1st	58.9
2nd	18.7
3rd	7.4
4th	5.9
5th	3.0
6th	1.0
7th	1.1
8th	.7
9th	.6
10th	.5

Figure 1 shows the actual number of running words accounted for by each one hundred different words. If one considers the second bar which includes all the second hun-

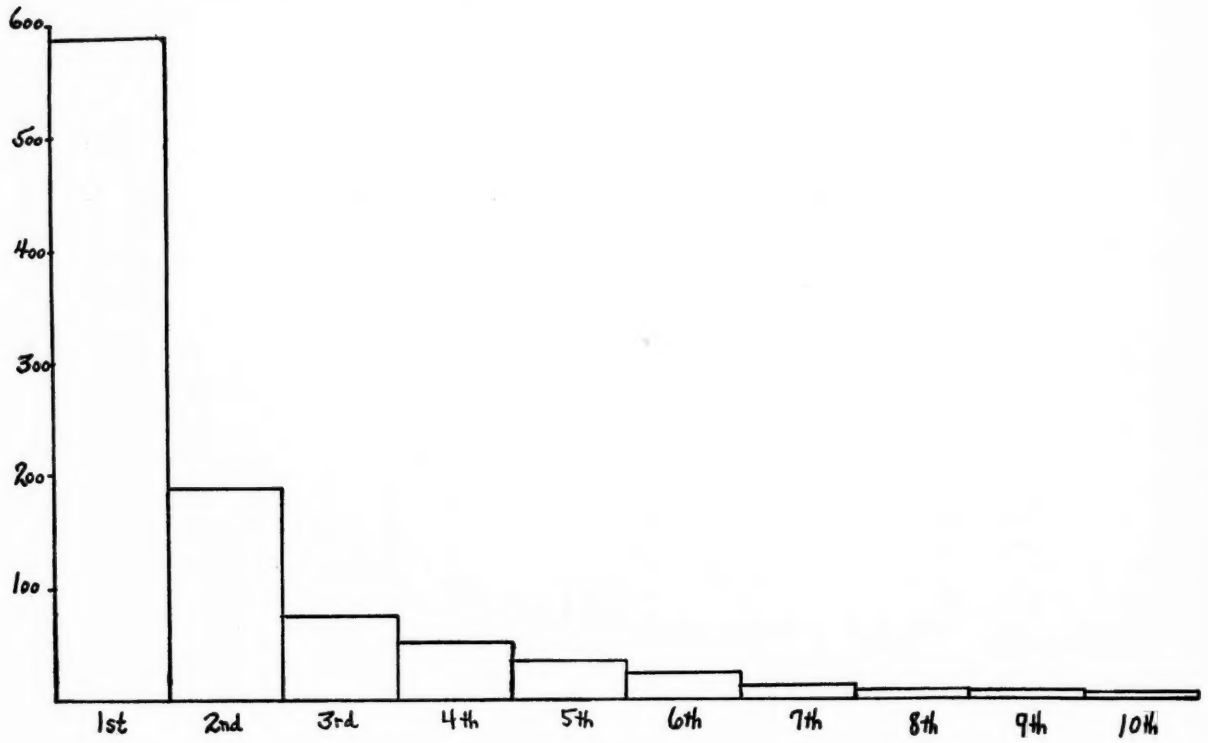

FIGURE 1
Number of Running Occurrences of Each 100 Different Words
(Each bar represents a group of 100 words.)

dred most commonly spoken words, then one can see by examining the ordinate that these words had a frequency of occurrence of less than 200 in any 1,000 chances offered. If all the bars were placed on top of another, then 1,000 words would be represented. The first hundred words were so common that their bar stands high above the others. The second hundred is only a third as common as the first hundred. It will be noted that past the first five hundred words, there is only a very slight decrease in frequency of occurrence. In fact the difference between the ninth and tenth hundreds is only a matter of one word, whereas the difference between the second and third hundreds is of the order of 113 words.

Figure 2 shows the relative frequency of occurrence per 100,000 words for each specific word. For example, the word which is fiftieth in commonness, the word *time,* actually occurred slightly less than 300 times in 100,000 chances. This graph is a most startling evaluation of language behavior. No one would have supposed that it would have been quite so L-shaped. No one would have predicted that only fifty different words would be the only words spoken every other time a word is said. No one would have guessed that the twenty-five most common words would make up 40 per cent of all that is said. And no one would have predicted that when the instructor has taught only fifty words to the deaf child that the instructor was half done; that the child had already learned half of all the words he will ever say.

Those fifty most common words are: **the, and, of, a, to, in, it, is, that, have, this, be, work, I, are, they, do, for, he, many, you, we, one, an, as, not, if, make, on, there, was, or, all, but, will, would, with, which, people, more, light, very, at, by, man, these, can, so, his, time.**

Studies of the development of speech indicate that the instructor should teach the deaf child first of all the one-word sentence. It is routine today that this is done with such words as "Ball." The one-word sentence should first be composed of only nouns. Soon verbs can be used in one-word sentences. This is followed by adverbs and adjectives.

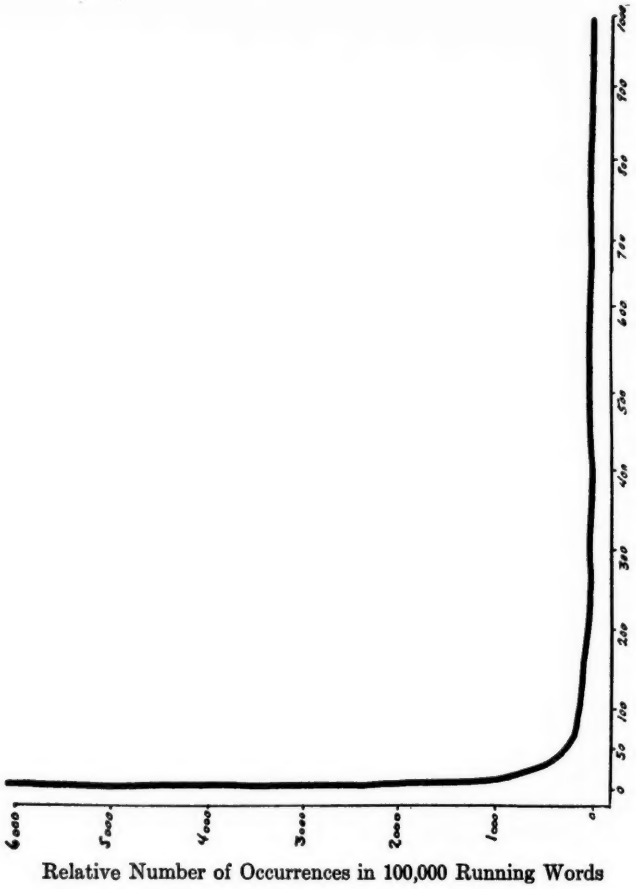
6000
5000
4000
3000
2000
1000
0
0
50
100
200
300
400
500
600
700
800
900
1000
Relative Number of Occurrences in 100,000 Running Words
1,000 Different Words Located by Rank Order

FIGURE 2

Next the instructor should teach two-word sentences made up of two nouns, or a noun plus a verb, or a noun plus an adjective, or a verb plus an adverb. As soon as the child is able to put more than three words together, then he should be taught the fifty words which will make up half of his permanent vocabulary. When this is done, he will already know more than half of all the words he will ever say.

The Essentials of Acoustic Programs

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THE value of electrical hearing aids in classrooms for the acoustically handicapped has often been underestimated, but just as often the practical use claimed for the equipment has been grossly exaggerated. While the potential value of group hearing aids has often not been realized, the actual value has been overrated.

So many factors enter into the successful use of hearing-aid equipment, and so seldom are these factors given the necessary consideration that the far greater portion of time and money spent upon them has been wasted. Of course in some cases of seeming waste pioneering values have been achieved. The time and mistakes of experimenting could, however, be greatly reduced if honest opinions gained from the use of hearing aids were pooled for common study.

Foremost among the essentials of acoustic programs using electrical equipment are: (1) Enthusiastic acceptance on the part of administrators of the educational value of such a program; (2) Systematic and intelligent supervision; (3) The keeping and studying of records; (4) The giving of unbiased and carefully observed results on the part of teachers; (5) The recognition of individual needs and differences among the pupils; (6) The acquiring of prompt and expert servicing facilities; (7) A mechanical aptness on the part of teachers; (8) Equipment suitable to the room and class conditions; (9) Suitable teaching methods; (10) Well adjusted teachers; (11) Suitable classification of pupils; (12) Recognition of comparative values; (13) Consideration of acoustic properties; (14) Sanitary conditions; (15) Recognition of the previous experiences of both pupils and teachers with hearing-aid equipment; (16) Abundant opportunity for extra-curricular acoustic activity.

The Essentials

1. *Enthusiastic Acceptance on the Part of Administrators of the Educational Value of an Acoustic Program.*—No hearing-aid program can work unless given the support of the administrators. Many such leaders have been justly skeptical of such programs, and have awaited further proof of success before purchasing expensive equipment. Many have observed outright failure with equipment used for trial purposes. Naturally unless these executives realize where the fault lies, or what steps must be taken to remove the inefficiencies, they will be reluctant to give the whole-hearted support necessary for a successful program.

Just as much hindrance to success are executives who are prone to giving lip service to their progressive methods, and boasting of the number of hearing-aid units installed in their schools without actually knowing just what use they are being given. They may quote teachers as to the value of the aids when the teachers have made their statements merely as has been demanded of them. If teaching worth is judged by certain statements, teachers are inclined to make the desired responses. Programs under such circumstances lead to general dislike of equipment among staff and pupils which is sure to bring adverse outlooks for years to come. Only executives who have the necessary information, or can and will get the facts, are in a position to administer such a program. Only after the facts are realized can they become guiding factors, and then the means for using the information must be provided. Thousands of dollars worth of equipment and years of educational achievement are wasted because provisions are not made to insure the proper function of the programs.

2. *Systematic and Intelligent Supervision.*—The chief executive of a large school is not in a position personally to administer a hearing-aid program. He is fortunate if he knows what he may plausibly expect from such a program. Departmental heads are scarce who have the time or knowledge to take care of the entire school's supervisory needs in this field. It is beyond the most exaggerated expec-

tations that the individual teachers can take care of their own problems. They need systematic guidance, and help, and the co-ordinated knowledge of other teachers like themselves. Teachers who might qualify as experts of acoustic education are all too often delegated to a single classroom.

Persons who might meet the demands of a supervisor of acoustic work should have the following qualifications: (1) Years of teaching experience with varied aids so as to understand characteristics of hearing aids and their application to the needs of the children; (2) A good background of general educational procedures with both normal and handicapped children in order to elevate the handicapped toward more normal educational levels; (3) A background of child psychology to understand various reactions to hearing-aid equipment and educational procedures; (4) A knowledge of normal and abnormal ear conditions in order to adjust aids to individual needs, and to co-operate with the medical staff in taking care of hearing peculiarities; (5) An aptitude of a mechanical nature in order to remedy minor troubles and make essential recommendations to service men; (6) A personality capable of inviting the co-operation of administrators, teachers and others; (7) A knowledge of speech correction so as to be able to make recommendations for speech improvement through the use of hearing aids; (8) A knowledge of lip-reading in order to co-ordinate the use of eyes with ears in helping the children overcome some of the effects of their handicaps; (9) A genuine love of children and a religious desire to see their welfare advanced; (10) A scientific attitude toward analyzing results that have been achieved by use of various tests and records; (11) The habit of promptness so as to insure uninterrupted performance of the program; (12) The ability to determine relative values so that one aspect of an individual's nature will not suffer because a lesser one is emphasized; (13) A knowledge of acoustic properties of rooms and equipment.

There must be someone to whom the teachers can bring their problems who has the knowledge and power to find the answers, have faults remedied and repairs made. Even

ability is of little value if authority to get things done is lacking. Success depends on continued and pleasant experience through the use of the hearing-aid equipment. Difficulties which cause waste of time and unpleasantries must be promptly met or prevented when possible. This demands that the supervisor be in constant touch with the teachers and pupils, and give systematic check ups of the equipment and the results obtained from its use.

The supervisor of the acoustic program must understand the problems involved so as to be able to give recommendations for the purchasing of hearing-aid equipment and materials which supplement it. He must be familiar with the types of aids upon the market, advances made in acoustic work, and the theories and facts about equipment and its use.

It is important that the supervisor be able to pool the results of the various aids, and the knowledge or opinions of the different teachers if educational procedures in this field are to progress, and we are to keep abreast with what science has to offer the acoustically handicapped.

3. *The Keeping and Studying of Records.*—As hearing-aid equipment is for the purpose of improving the various uses of language some standard of measurement needs to be maintained. Possibly the results may be of such magnitude that we assume them to be good, but such procedure leads to indefiniteness and skepticism, and questions of degree and relative value remain unanswered.

While achievement tests have been kept for children in many schools, these have usually not been related to any teaching procedure. While speech recordings have been made in some cases, these often have never been subjected to even the most superficial comparative analysis. Study of records and opinions expressed by the teachers may not produce 100 per cent reliability, but should prove valuable as teaching guides in lieu of more accurate standards. Audiograms are kept of children in schools for the deaf, but are too seldom analyzed in relation to the kind of use each individual makes of available hearing-aid equipment. Although lip-reading tests are not standardized, even simple tests

given by certain staff members should give fair indications as to the relationship of lip-reading ability and the use of hearing aids. Language divisions of commonly used achievement tests along with samplings of composition can prove useful in determining the effects of acoustic work on general language ability. Other records, likewise, can prove very helpful in determining the general value of the acoustic program.

While any program is likely to fall short of its purpose unless use is made of records which determine in some degree its value, there is also little use of records unless there is honest assurance that the use of hearing aids is not half-hearted or irregular. Only intelligent, understanding and systematic check ups by a program director can assure the actual purposeful use of hearing aids even when they do exist as part of classroom equipment, and only under such conditions can the study of records in relation to such a program prove of any reliable value.

4. *The Giving of Unbiased and Carefully Observed Results on the Part of Teachers.*—Unless prompt and periodic service is always available, and unless the acoustic properties of the equipment and the rooms are given understanding attention, there is good possibility that the teacher will never find out enough about the value of electrical aids to report on the true value of their use. They are not effectively used just because the power is turned on, the teacher speaks through a microphone, the pupils wear headphones, and the administrators cite the work being done as outstanding examples of progressive education. Teachers sometimes praise their results in order to gain favor from their administrators. When one or more teachers under certain circumstances do actually meet with praiseworthy success, or pretend such success, then other teachers are apt to cover up their own results for fear of being considered inferior. Under such conditions it is of little use to report results to supervisors or administrators who understand less about the true situation than the teachers themselves. Except in a well organized program the reports from teachers may not be entirely reliable, but should prove useful if honest.

Could teachers share their true opinions better with well

informed supervisors, it is probable that more steps would be taken to remedy the deplorable situation that is so common, and were these steps taken teachers would have a better basis for judging the value of their equipment.

Any honest report is valuable, but to give a true picture of any given acoustic class the following factors should be given due consideration: (1) The hearing loss of the pupils; (2) The ear and general health conditions of the children; (3) The mental attitudes and experiences of the pupils; (4) The mental and achievement levels of the individuals; (5) The mechanical condition of the microphones, amplifiers, headphones, wiring and controls; (6) The approximate amplification needed for each class; (7) The approximate amplification needed for each pupil; (8) The regulation of both amplifier and individual controls to provide for both group and individual needs; (9) The pick up of the microphone at various angles and distances; (10) The arrangement of the equipment for optimum performance; (11) The fit and acoustic nature of the ear phones; (12) The acoustic properties of the room; (13) The tone and frequency characteristics of the amplified sound; (14) The apportionment of time to various acoustic activities.

5. *The Recognition of Individual Needs and Differences Among the Pupils.*—Persons with normal hearing often turn on the controls higher for pleasant listening than do deaf children. Not knowing the amount of hearing necessary for the interpretation of sounds, deaf children must be shown and led to use aids properly in order to gain speech patterns. Adventitiously deaf children with lesser losses often use more amplification than congenitally deaf children with greater losses if unguided in the use of amplification controls. Each type and degree of hearing loss, and the age of its onset present specific problems. Even differences in the nervous and physical states of each child must be considered in order to prescribe the needed amount of amplification, the length of time to use increased volume, the nature of materials to be used, and the best suited type of frequency control, or the use of various types of headphones and other equipment.

6. *The Acquiring of Prompt and Expert Servicing Facili-*

ties.—The best equipment is only good insofar as it is kept in working condition. It is common to find wiring or connections which are constantly giving trouble, machines that work one minute and fade away the next, controls that work at only certain positions, loose ear phones that are a constant source of feed-back and a dozen or more ailments that are upsetting the total performance. Only periodic inspection can remedy this waste of time, these unpleasant interruptions, the adverse attitudes which result and the frayed nerves of such experiences. Inspection can't keep minor ills from occurring but when they do immediate remedial attention should take place. Possibly three sets of equipment, easily set up, and kept in good working order should be on hand for every two teachers in order to meet the needs if repairs require more than a few minutes' time. Neglect of minor disorders and slow servicing mean disaster to the usefulness of even the best and most sturdy aids.

The supervisor of the acoustic program should be in a position to take care of each immediate situation, and provide temporary equipment while repairs are taking place. He should know what is to be expected of equipment to fit the pupils' needs, and to make recommendations for repair of a nature which the mechanic himself would not be in a position to realize.

7. *A Mechanical Aptness on the Part of Teachers.*—While the average teacher under proper supervision can soon learn to understand the controls, wiring connections and the like, some instances exist where otherwise good teachers lack an aptness to watch and take care of such things. In these cases, unless someone is constantly available to make adjustments, acoustic equipment may find its value greatly reduced. No matter how efficient the supervisor may be, the teacher's ability to adjust to the situation means a great deal.

8. *Equipment Suitable to Room and Class Conditions.*—It is not uncommon to find master controls turned down so low by the teacher in order to avoid feed-back, that the earphones actually shut out voice instead of amplifying it. Naturally this equipment is not suited to the existing con-

ditions. Even the best equipment may be unsuitable in some circumstances. Inferior equipment in regard to tone and frequency may give better results in many instances unless provisions can be made to eliminate other difficulties.

Classes in which several pupils demand heavy amplification often result in acoustic problems that can't be met by the individual teacher. The common cure for feed-back is turning down both the output and high frequencies. In such cases only the lesser deafened are able to benefit. The pupils with greater losses, not excluding a great many who understand language with acoustic aids, cannot use them at all. All the pupils may wear aids and have enough hearing to gain from their use, but many of them can hardly do more than show pretended use.

It is simpler for a class and teacher to adjust to the use of an almost worthless amount of amplification than forever to be determining which head set is causing trouble, or to suffer frequent interruptions caused by feed-back or mechanical difficulties. Those teachers who on the surface appear to be having the greatest amount of success with hearing aids are often getting very little actual use from them.

Sound proofing of rooms, using larger or better fitting ear pieces, using stronger and more flexible headbands, the employment of double headphone sets, and the use of large but spongy ear cups are among the things that can be done to permit the use of more sensitive equipment, which peaks amplification in the much needed higher frequencies.

The use of una directional microphones will alleviate feed-back difficulties but at the expense of possibly just as important factors, unless of course individual una directional mircophones are within the budget. If the microphone is almost entirely for teacher use as it may be in certain classes, a una directional microphone harnessed to the teacher, so that a relatively uniform distance and angle are maintained with the teacher's mouth, will remedy many difficulties.

All equipment should be carefully selected in order to obtain that which will give the most efficient use considering

the conditions of the class, room and acoustic guidance program. The most scientific equipment is of little value if its use involves continual difficulties. The best that can be used with sufficient amplification, a fair degree of fidelity, and without significant interruptions, is most valuable regardless of any other characteristics. The ability to give maximum use is the first requisite of any aid.

9. *Suitable Teaching Methods.*—As the purpose of hearing aids is to normalize learning conditions, so should teaching methods approach those given the normal child. The experiences with hearing should be varied and natural. School should be a place where the pupils learn to live in normal situations, and where they learn to react to life as it is normally lived. Pupils should be given the chance to hear their own speech as well as that of others, and to gain an idea of the many meaningful sounds about us every day.

Common noises, rhythms, stories and music are as important as drill work even before the pupil is capable of understanding all these sounds in their full meanings. Even little tricks to develop the desire on the part of pupils to use aids may be a vital part of any program. Pleasant experiences should result from hearing. The benefits from forced or indifferent use of hearing are indeed doubtful.

Properly trained, intelligent, well integrated teachers who keep up with the advances in the education of both the handicapped and the normal should, with the aid of suggestions given by colleagues and supervisors, be able to suit the teaching method to the situation and the pupil.

10. *Well Adjusted Teachers.*—Possibly the adjustment the teacher makes with the total school situation is more important than the method used. The teacher's adjustments to pupils, administrators, subject matter, methods, other teachers, schoolroom equipment and life in general make up a picture of integration that can't be ignored. It is quite possible that a good teacher in certain situations is an unadjusted person when confronted with the use of electrical aids. Unless adjustment can be made such a teacher should be placed in a more suitable position. If poorly adjusted to life

in general a person has little to offer as a teacher, especially of handicapped children.

The success of any equipment depends a great deal upon the attitude of the teacher toward it, and her work with it. Enthusiasm on the part of the teacher is contagious and spreads to the pupils. Skepticism or half-heartedness on the part of the teacher is almost sure to develop dislikes and distrusts with the children.

11. *Suitable Classification of Pupils.*—It is difficult to get a class perfectly classified especially in schools for the acoustically handicapped whose enrollments are comparatively small, and whose problems are many. The ability to follow conversation with the use of aids; the amount of hearing shown by audiometric tests; the language ability of pupils; intellectual ability; educational achievement; and chronological and social factors all should be considered in making classifications.

To say that hearing-aid classes should be composed solely of those who can follow conversation with aids would discriminate against both those who might use them with sufficient practice, and many adventitiously deaf children who have normal language but great hearing losses who with special lip-reading work adjust socially and educationally with those retaining usable hearing better than any other group. Pupils with great losses, but who can follow conversation with sufficient amplification, often demand more than conditions will permit. This, however, is usually a fault of supervision and not classification.

To group children according to audiometric curves alone would place many with great losses, but ability to follow conversation due to previous use of language, high intelligence, intense training, or good lip-reading ability, in classes for typically deaf children, and some congenitally deaf pupils with little conception of normal language in groups of the hard of hearing. Such a grouping would overlook educational achievement, use of hearing, language, intelligence and social factors.

To group entirely according to hearing abilities thus offers

problems quite as acute as to group according to any other one factor such as IQ, language ability, or age. Consequently, classification is not so much a problem of grouping children to fit acoustic demands, as it is of applying practical acoustic principles to the classes as they already exist.

The classification of pupils chiefly in terms of educational achievement is possibly the most common method, and offers fewer conflicts with a hearing-aid program that is efficiently supervised than might sometimes be supposed.

The deaf child who is on an educational par with those getting language with the use of aids is more often than not an excellent lip-reader, and is normalized somewhat by participation in a hearing environment. For the slow learning hard-of-hearing child to be at his educational level with deaf children provides for him the only rate of learning that he is capable of grasping. He needs his hearing plus the slow thorough teaching.

While there are many factors to be considered in classifying pupils in order to achieve educational aims, grouping of children for acoustic programs seems relatively unimportant compared with the need for efficient supervision.

12. *Recognition of Comparative Values.*—In applying any acoustic principles some factors need to be sacrificed in order to emphasize more important ones. The classification of pupils, materials to be used, methods of presentation, and the selection of aids must all be given weighed consideration.

A supervisor of an acoustic program should be aware of the educational program in its entirety. A careful relationship should be maintained between hearing activities and their effects upon speech, lip-reading, language usage, health, social activity, and the accumulation of usable skills and knowledge. Above all else the chief aim of any program should be to develop useful well adjusted individuals.

13. *Consideration of Acoustic Properties.*—A classroom used mainly for oral work should first of all be in a relatively quiet location, away from busy streets, gymnasiums and shop noises. Hard surfaced classrooms with nothing to absorb the sound offer a difficult situation. Even an open

window or door may sometimes help, but under a well organized program some type of sound proofing, even though it be the simplest type of cloth material draped from certain walls, makes the difference between success and failure. In some instances rug materials on the floor may be cheap in relation to the benefits received. Chairs, tables and other furniture or equipment that is likely to be moved can have their bases padded with felt or rubber to a valuable advantage. The selection and arrangement of equipment to give maximum results at all times, and the nature of the electric wiring and connections are among things needing attention.

As with hearing-aid equipment, other acoustical aids such as radios and phonographs need the same careful consideration if they are to play their part in popularizing and normalizing acoustic activities.

14. *Sanitary Conditions.*—In classes of the acoustically handicapped, ear conditions exist which may cause odors or discharge to find its way to the earphones. One can't blame a pupil for not wishing to use an earpiece that is common property unless regular disinfecting is practised. Even with individually used earpieces periodic cleaning should be the rule. Teachers of acoustic classes should be provided with means to keep equipment sanitary.

It is preferable that each pupil have ear phones, and be responsible for their use and care—to keep them free from odors, ear discharge, dust or other unsanitary conditions. In some cases individual cups to be fitted to ear phones will solve the problem without necessitating individual head sets. If this is too troublesome the regular practice of wiping them off with a cloth dipped in some good disinfectant should prove helpful.

15. *Recognition of Previous Experiences with Hearing Aids on the Part of Both Pupils and Teachers.*—Pupils first using hearing aids need different guidance from those who have become accustomed to them. The following of the flow of language through them may in a great many cases depend upon days or even years of use. Pupils and teachers who have come to look upon hearing-aid equipment as something that wastes time with painful noises and unpleasant interruptions,

need careful consideration when and if a well organized program is instituted. Pleasant experiences under intelligent guidance is the best way to overcome mistakes of the past, and possibly this may be a very gradual and difficult process. While it may take several months for results to manifest themselves after a well organized program has been launched, a few weeks of unpleasant experiences with aids may result in adverse attitudes which require months of mending.

16. *Abundant Opportunity for Extra-Curricular Acoustic Activity.*—Radios with ear phone attachments in dormitory rooms; dance, glee, speech, music or rhythm clubs all may help give the pupils more normal experiences, and popularize the use of hearing. The use of ear phones in auditorium activities—programs, movies and the like—may really be the means of providing the greatest amount of educational value per dollar spent. The greater the variety and the greater the opportunity for hearing experiences, the more successful will be the school acoustic program as well as the educational efforts in general.

Individual hearing aids should be handled by every school claiming to help the acoustically handicapped. It takes time in adjustment and guidance to select a satisfactory aid for the days beyond school. Surely the pupils most likely to profit from individual aids should have the advantage of guidance in their use while at school.

Many parents would be willing and happy to provide means for individual aids if practical and reliable recommendations were made for their selection and use.

Schools for the acoustically handicapped should accept every opportunity to help pupils benefit through the use of their sense of hearing, and should provide acoustic experiences in abundance and variety.

Conclusion

Facts and Logical Assumptions.—Most pupils have some degree of hearing. Any hearing may give partial patterns of rhythm and accent which alone are important factors in speech. Intense and extensive training through the sense of hearing tends to normalize individuals otherwise fated to

remain with characteristic "deafisms." The ear is the chief organ by which we learn as shown by the severe retardation common to deaf pupils. The greater the use of hearing the more accelerated is the educational progress.

Amplified sound is useful only if properly applied. Hearing-aid equipment is sensitive and must receive careful and intelligent care. The average technician, teacher, or departmental head is in no position to administer the acoustic needs of the school. The acoustic program needs expert guidance and co-operative school effort. This is often, if not usually, so lacking that time and money spent for acoustic equipment and teaching are mainly wasted. The education of the handicapped child is very expensive. The average pupil in schools for the deaf falls short of junior high school level even after the expenditure of huge sums for his education. The money spent for the proper function of a hearing-aid program may provide the cheapest means of education, but the gains truly can't be measured in dollars and cents. They can, and should, be measured in human values.

Positions for Which Deaf-Mutes May Be Considered

UNITED STATES CIVIL SERVICE COMMISSION
Washington, D.C.

EXECUTIVE ORDER NO. 984 of December 1, 1908, as amended by Executive Order No. 1060 of April 7, 1909, provides as follows:

"Deaf-mutes may be admitted to examinations for all places in the classified civil service of the United States whose duties in the opinion of the heads of the several executive departments they may be considered capable of performing, and each department will furnish to the Civil Service Commission a list of such positions, which list shall not be changed without previous notice to the Commission, and in accordance with which the Commission shall certify or withhold from certification deaf-mutes as they are reached in their order."

In compliance with the provisions of this Executive order, the heads of Government establishments were called upon to furnish the Commission with lists of positions for which deaf-mutes, who have duly qualified in examination and whose names have been reached for certification, may be considered when vacancies occur. The positions named in the lists submitted in response to this request are tabulated below, with indication as to the departments and independent establishments which are willing to consider deaf-mutes for such positions.

Applications from deaf-mutes for examinations for any of the positions named in this circular will be accepted by the Commission, when such examinations are held, provided such persons are otherwise eligible. Their admission to examination, or certification for appointment, will not deprive the appointing officer of his usual right of choice in selecting eligibles; and the appointing officer's willingness to consider such eligibles for the positions listed does not, of course, bind him to appoint them to any particular position for

which speech or good hearing, or both, are essential, in his opinion, to the efficient performance of the duties.

Accountant.—Treasury.
Aircraft painter, junior.—War (Air Corps).
Automatic machines operator.—War (Engineer, Finance, Quartermaster Corps).
Bindery operative (hand work).—Government Printing Office.
Blueprint operator, junior.—Navy
Bookbinder.—Treasury
Bookbinder (hand work).—Government Printing Office.
Bookkeeper.—Civil Service Commission, Treasury.
Calculating-machine operator.—Agriculture (Farm Credit Administration.
Card-punch operator.—Agriculture (Farm Credit Administration), Civil Service Commission.
Card-punch operator (alphabetic).—Federal Security Agency (Social Security Board).
Carpenter (qualified in box making).—Agriculture.
Charwoman.—Agriculture.
Chemist.—Treasury.
Civil-service examiner, junior—Civil Service Commission.
Clerk.—Agriculture (Rural Electrification Administration), Civil Service Commission, Commerce (Weather Bureau), Federal Communications Commission, Federal Power Commission, Labor, Securities and Exchange Commission (Public Utilities Division), Smithsonian Institution, Treasury.
Clerk, under.—Commerce.
Clerk-typist, under.—Navy.
Compositor.—Government Printing Office, Treasury.
Computer.—Commerce (Coast and Geodetic Survey), National Advisory Committee for Aeronautics, Treasury, War.
Copyist.—Federal Security Agency (Social Security Board), War (Finance, Quartermaster Corps).
Counter (money).—Treasury.
Counter (money), expert.—Treasury.
Counter (paper).—Treasury.
Designer.—Treasury.
Draftsman.—Commerce (Coast and Geodetic Survey), National Advisory Committee for Aeronautics, Treasury, War (Engineer).
Draftsman (engineering), junior.—Navy.
Draftsman (lithographic).—Interior.
Electrotyper.—Government Printing Office.
Engineer.—National Advisory Committee for Aeronautics.
Engraver.—Commerce (Coast and Geodetic Survey), Treasury.
Engraver, copperplate map.—Interior.
File clerk.—Civil Service Commission, U. S. Employees' Compensation Commission, Federal Security Agency (Social Security Board), Interior (Division of Territories and Island Possessions), Navy, Veterans' Administration.
Instrument maker.—National Advisory Committee for Aeronautics.
Key-punch machine operator.—Agriculture.
Laboratorian.—Federal Security Agency (Public Health Service).
Laboratorian (bacteriology), assistant.—Federal Security Agency (Public Health Service).
Laborer, classified.—Commerce (Civil Aeronautics Authority).
Laborer, unskilled.—Agriculture, Interior (National Capital Parks).

Laundry worker.—Government Printing Office.
Law clerk.—Treasury.
Linotype operator.—Government Printing Office.
Locksmith.—Treasury.
Machinist.—National Advisory Committee for Aeronautics.
Mail clerk, under.—Navy.
Mechanic.—National Advisory Committee for Aeronautics.
Medical-voucher auditor.—U. S. Employees' Compensation Commission.
Mimeograph operator—Civil Service Commission.
Mimeograph operator, under.—Navy.
Modelmaker.—National Advisory Committee for Aeronautics.
Monotype keyboard operator.—Government Printing Office.
Negative cutter.—Interior.
Office machines (miscellaneous) operator.—Civil Service Commission, Federal Security Agency (Social Security Board).
Operative.—Commerce (Census).
Packer.—Commerce (Census).
Patternmaker.—National Advisory Committee for Aeronautics.
Photoengraver.—Government Printing Office.
Photographer.—Commerce, National Advisory Committee for Aeronautics.
Photostat operator.—Commerce (Patent Office).
Physicist.—National Advisory Committee for Aeronautics.
Pressfeeder.—Government Printing Office.
Printer.—Commerce (Weather Bureau).
Property and supply clerk, under.—Navy.
Record clerk.—Navy.
Scientific aid.—National Advisory Committee for Aeronautics.
Seamstress (aircraft fabric), female.—War (Air Corps).
Sorter.—Federal Security Agency (Social Security Board).
Sorting-machine (horizontal) operator.—Civil Service Commission.
Statistical clerk.—Civil Service Commission.
Statistics and accounts machine operator.—Justice.
Stencil cutter.—Federal Trade Commission.
Stereotyper.—Government Printing Office.
Storekeeper, under.—Navy.
Subprofessional positions (some).—Smithsonian Institution.
Tabulating-machine operator.—Agriculture (Farm Credit Administration).
Tabulator.—Federal Security Agency (Social Security Board).
Translator.—Treasury.
Typist.—Agriculture (Farm Credit Administration, Rural Electrification Administration); Civil Service Commission, U. S. Employees' Compensation Commission, Federal Communications Commission, Federal Power Commission, Federal Security Board), Justice, War (Engineer).
Typist (for copy work).—Veterans' Administration.
Welder.—National Advisory Committee for Aeronautics.

Form 1786, August 1940.

Positions for Which the Hard of Hearing May Be Considered

UNITED STATES CIVIL SERVICE COMMISSION
Washington, D.C.

PERSONS hard of hearing who are otherwise qualified will be admitted to examinations where, in the opinion of the Commission and the appointing officer, the defect will not prevent proper performance of the duties of the position for which the examination is announced. Persons with defective hearing will be considered under the provisions of this form when they are unable to meet the hearing standard stated in the announcement of the examination for which they desire to compete.

The admission of the hard of hearing to examination and their certification for appointment will not deprive the appointing officer of his usual right of choice in selecting eligibles. His willingness to consider such eligibles for any position for which, in his opinion, good hearing is not essential to the proficient performance of the duties, does not bind him to appoint them. The purpose of this list is to show the positions for which appointing officers will consider persons hard of hearing who meet all other requirements of the examinations taken, as distinguished from positions for which normal hearing is required.

The list of positions is only a partial one prepared from information received from the departments and independent agencies. It is not possible to give a complete list, but it will be noted that the list includes a great many classes of positions; with respect to other positions not named herein, the announcement of the examination may be consulted to determine whether or not there is any provision permitting the admission of the hard of hearing to the examination.

Accountant.—Treasury.
Aircraft electrician.—War (Air Corps).
Aircraft engine mechanic (E. T. O.).—War (Air Corps).
Aircraft fabric worker.—War (Air Corps).
Aircraft instrument mechanic.—War (Air Corps).
Aircraft mechanic.—War (Air Corps).
Aircraft painter.—War (Air Corps).

Aircraft painter, junior.—War (Air Corps).
Aircraft propeller mechanic.—War (Air Corps).
Aircraft sheet metal worker.—War (Air Corps).
Aircraft wire worker.—War (Air Corps).
Automatic machines operator.—War (Air Corps, Engineer, Finance, Quartermaster Corps).
Bibliographer.—Interior.
Bindery operative (hand work).—Government Printing Office.
Blacksmith.—War (Air Corps).
Blueprint file clerk.—War (Air Corps).
Blueprint operator, junior.—Navy.
Bookbinder (hand work).—Government Printing Office.
Bookkeeper.—Civil Service Commission, Treasury.
Bookkeeping-machine operator.—War (Air corps).
Calculating-machine operator.—Agriculture (Farm Credit Administration).
Card-punch operator.—Agriculture (Farm Credit Administration), Civil Service Commission.
Card-punch operator (alphabetic).—Federal Security Agency (Social Security Board).
Card-punch operator (tabulating).—Government Printing Office.
Carpenter.—War (Air Corps).
Carpenter (qualified in box making).—Agriculture.
Cataloguer.—Interior.
Charwoman.—Agriculture.
Chemist.—Treasury.
Civil-service examiner, junior.—Civil Service Commission.
Clerical worker (routine).—War (Air Corps).
Clerk.—Civil Service Commission, Commerce (Weather Bureau), Federal Communications Commission, Federal Power Commission, Labor, Securities and Exchange Commission (Public Utilities Division), Smithsonian Institution, Treasury.
Clerk, minor.—War (Air Corps).
Clerk, under.—Commerce.
Clerk-typist, under.—Interior, Navy, War (Air Corps).
Compositor.—Government Printing Office, Treasury.
Computer.—Commerce (Coast and Geodetic Survey), National Advisory Committee for Aeronautics, Treasury, War (Engineer).
Copyist.—Federal Security Agency (Social Security Board), War (Air Corps, Finance, Quartermaster Corps).
Counter (money).—Treasury.
Counter (money), expert.—Treasury.
Counter (paper).—Treasury.
Designer.—Treasury.
Draftsman.—Commerce (Coast and Geodetic Survey), National Advisory Committee for Aeronautics, Treasury, War (Engineer).
Draftsman (engineering), junior.—Navy.
Draftsman (lithographic).—Interior.
Duplicating-machines operator.—War (Ordnance).
Editorial clerk.—Interior.
Electrician.—War (Air Corps).
Electroplater.—War (Air Corps).
Electrotyper.—Government Printing Office.
Engineer.—National Advisory Committee for Aeronautics.
Engraver.—Commerce (Coast and Geodetic Survey), Treasury.
Engraver, copperplate map.—Interior.
File clerk.—Civil Service Commission, U. S. Employees' Compensation

Commission, Federal Security Agency (Social Security Board), Interior, Navy, Veterans' Administration, War.
Fireman, stationary boiler.—War (Air Corps).
Gardener.—War (Air Corps, Ordnance).
Hostler (stable).—War (Ordnance).
Instrument maker.—National Advisory Committee for Aeronautics.
Janitor.—War (Air Corps, Ordnance).
Key-punch machine operator.—Agriculture.
Laboratorian.—Federal Security Agency (Public Health Service).
Laboratorian (bacteriology), assistant.—Federal Security Agency (Public Health Service).
Laborer, classified.—Civil Aeronautics Authority.
Laborer, skilled.—War (Air Corps).
Laborer, unskilled.—Agriculture, Interior (National Capital Parks), War (Air Corps).
Laundry worker.—Government Printing Office, War (Air Corps).
Law clerk.—Treasury.
Library aid.—Interior.
Linotype operator.—Government Printing Office.
Locksmith.—Treasury.
Machinist.—National Advisory Committee for Aeronautics, War (Air Corps).
Mail clerk.—Interior, War (Air Corps).
Mail clerk, under.—Navy.
Mechanic.—National Advisory Committee for Aeronautics, War (Air Corps).
Mechanic's helper, junior.—War (Air Corps).
Medical-voucher auditor.—U. S. Employees' Compensation Commission.
Messenger.—Interior.
Millwright.—War (Air Corps).
Mimeograph operator.—Civil Service Commission, War (Air Corps).
Mimeograph operator, under.—Navy.
Modelmaker.—National Advisory Committee for Aeronautics.
Monotye keyboard operator.—Government Printing Office.
Negative cutter.—Interior.
Office-appliances operator.—Interior.
Office machines (miscellaneous) operator.—Civil Service Commission, Federal Security Agency (Social Security Board).
Operative.—Commerce (Census).
Packer.—Commerce (Census), War (Air Corps).
Painter.—War (Air Corps).
Parachute mechanic.—War (Air Corps).
Patternmaker.—National Advisory Committee for Aeronautics.
Photoengraver.—Government Printing Office.
Photographer.—Commerce (Census), National Advisory Committee for Aeronautics.
Photostat operator.—Commerce (Patent Office).
Physicist.—National Advisory Committee for Aeronautics.
Plumber.—War (Air Corps).
Police worker (outside).—War (Air Corps).
Pressfeeder.—Government Printing Office.
Printer.—Commerce (Weather Bureau).
Proofreader.—Interior.
Property and supply clerk, under.—Navy
Record clerk.—Navy, War (Air Corps).
Scientific aid.—National Advisory Committee for Aeronautics.

Seamstress (aircraft fabric), female.—War (Air Corps).
Sorter.—Federal Security Agency (Social Security Board).
Sorting-machine (horizontal) operator.—Civil Service Commission.
Statistical clerk.—Civil Service Commission, Interior.
Statistics and accounts machine operator.—Justice.
Stencil cutter.—Federal Trade Commission.
Stereotyper.—Government Printing Office.
Storekeeper, under.—Navy, War (Air Corps).
Subprofessional positions (some).—Smithsonian Institution.
Tabulating-machine operator.—Agriculture (Farm Credit Administration).
Tabulator.—Federal Security Agency (Social Security Board).
Translator.—Treasury.
Typist.—Agriculture (Farm Credit Administration, Rural Electrification Administration), Civil Service Commission, U. S. Employees' Compensation Commission, Federal Communications Commission, Federal Power Commission, Federal Security Agency (Social Security Board), Interior, Justice, War (Air Corps, Engineer).
Typist (for copy work).—Veterans' Administration.
Warehouse positions.—National Advisory Committee for Aeronautics, War (Air Corps).
Welder.—National Advisory Committee for Aeronautics, War (Air Corps).

Form 1786a, January 1942.

Miscellaneous

I.S.F.

A Successful Venture in Dramatics by Deaf Students.—An achievement of unique distinction has been recorded by the Dramatic Club of Gallaudet College when on the evening of Sunday, May 10, 1942, its cast gave a public performance of the popular Broadway comedy, "Arsenic and Old Lace" in the Fulton Theater in New York City. Having successfully prepared for a presentation of the play on the stage at the college a week earlier, the young deaf actor students were invited as guests of the producers of the original play to repeat the performance in the language of signs in their New York City playhouse, placing at their service the costuming, stage facilities and managing personnel of the parent cast. This was probably the first time a group of deaf actors had ever had the opportunity to take so prominent a place in public dramatics, and every report, in the press reviews and by letter, indicated the group made the most of the opportunity. The opinion was universal that the young men and women of Gallaudet College acquitted themselves in finished style.

Mr. Eric Malzkuhn, a junior at the college who played one of the key roles, also assumed a large share in making the necessary contacts and arrangements, while the burden of directing the play fell mainly to Professor F. H. Hughes of the college faculty. The interpreting for hearing spectators was done by Miss Margaret Yoder and Professor Elizabeth Benson, also of the college faculty.

The reaction toward the undertaking among theater critics is typically represented by the following comment, by Mr. John Ferris of Wide World News Service, in a column in the Washington *Sunday Star*, May 10, 1942, under the heading, Gallaudet Players Invade New York to Present Their Version of "Arsenic and Old Lace," Reminding That the Theater is Alive.

Finally, there is the matter of "Arsenic and Old Lace" because this mad whimsy on homicide is full of hope that all is not lost in the theater. There will always be another season, so long as writers can be found to turn their talents to deviltry of this kind and pro-

ducers like Howard Lindsay and Russel McKinley (Buck) Crouse are on hand to earn another million.

The presentation by the deaf players, all members of the Dramatic Club of Gallaudet College, will be limited to one performance tonight at the Fulton Theater.

The college, the only institution of higher education for the deaf in the world, was founded in 1864 by act of Congress. It is co-educational, has a student body of 155 and a faculty of 18. It awards degrees in the arts and sciences.

The dramatic club, according to Richard Maney, the eminent publicist, has already presented "Journey's End," "Cyrano de Bergerac" and "The Boor," a minor Chekhov play, in its hall at the college. This is to be its first public performance.

The players were looking around this season for a good play when Crouse and Lindsay heard of their search and promptly offered them "Arsenic and Old Lace." Crouse and Lindsay are that way when it comes to sharing their fun with the public.

They also offered the students the theater itself and the regular stage crew, and then capped their generosity by lending Bretaigne Windust, the director. Windust, of course, has had to direct through an interpreter.

Certain technical difficulties present themselves as might be expected. The actor who plays the part of Teddy Brewster (he's the one who fancies he is Theodore Roosevelt and is digging the Panama Canal) won't bother to blow a bugle and yell "Charge!" as he dashes up the stairs (San Juan Hill, to him). And the ringing of the telephone will likewise be eliminated.

In the dark scenes—when Teddy slips downstairs to carry his aunties' latest victim from the window box to the cellar, and when his mad brother Jonathan and his accomplice slip another body into the box from outside—the actors will wear luminous paint on their fingers.

The role of Jonathan, played here by Boris Karloff and on the road by Eric von Stroheim, will be played in Sunday's performance by Eric Malzkuhn, vice president and business manager of the dramatic club. There are 14 in the cast, but the students will eliminate the last humorous touch of the regular New York version—the 13 victims who run upstairs from the cellar to take a curtain bow.

"Arsenic and Old Lace" is also playing in Gothenburg, Sweden, at present, while another company is presenting it in Spanish at Buenos Aires and still another company is preparing to produce it in Mexico. It opened here in January, 1941.

If the Pulitzer Committee boys need cheering, they could not do better than to drop down to see the show.

A slight correction in Mr. Ferris' account is necessary. In compliment to the cast, the 13 arsenic victims did emerge as the final touch to make their curtain bow, and at the head of the procession was none other than Mr. Karloff himself, followed closely in the line by Messrs. Lindsay and Crouse.

And lastly, the feelings of an understanding spectator are to be noted in this letter.

New York, N.Y., May 11, 1942

DEAR PROFESSOR HUGHES:

Permit me to add my small voice to the chorus of praise that must be beating in on you and the Dramatic Club, from every side, for the presentation of "Arsenic and Old Lace," last night. It wasn't *fine*. That is an inadequate word. It was simply *superb*.

I attended the performance with at least a little bit of misgiving that the amateur actors would either overdo their parts or give a weak imitation of the polished acting of the professionals. They did neither.

I am no dramatic critic, but it seemed to me that the students were just *perfect*. I had years of experience on the amateur stage both at Fanwood and later at St. Ann's Church and never did any play then presented by volunteers adequately express the work of the author or reach such a high standard as your students.

You have set a mark for future dramatic students at Gallaudet College to aim at.

Another very great service you have rendered to the deaf of this country is a demonstration of the value of the sign language and its unlimited possibilities in the educational and social life of the deaf. For this you deserve the thanks of every deaf man and woman in the United States.

The large audience that attended went away more than satisfied. They were thrilled and delighted and had nothing but praise for all.

With my thanks for a very enjoyable evening and congratulations on your well-deserved success,

Sincerely yours,

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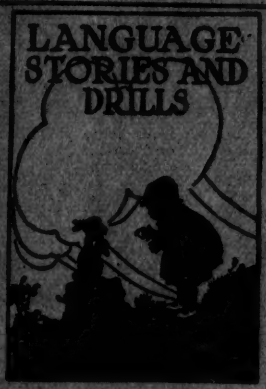

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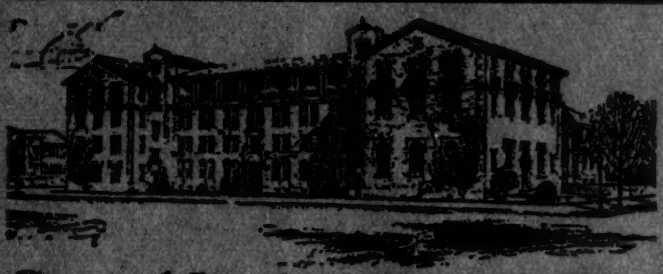

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